Commodore

1540/1541

TECHNICAL MANUAL
DEUTSCH/ENGLISCH

Service Manual

PREISGRUPPE 45

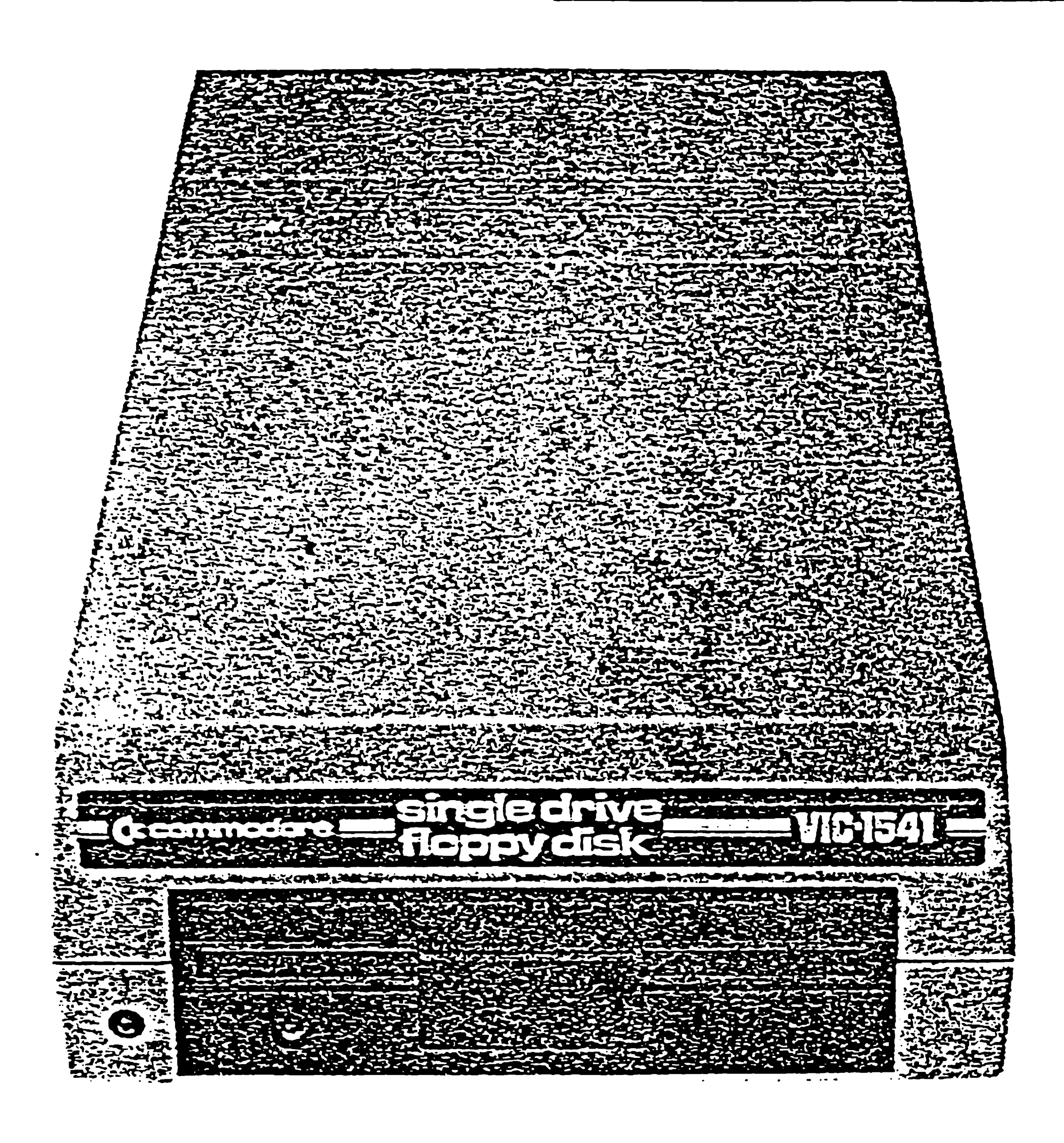
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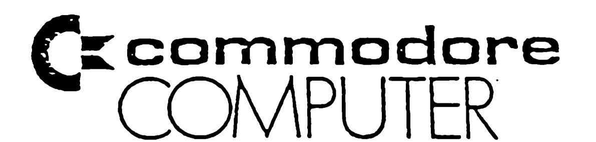


Commodore Single Disk Drive

Technical Manual

Model 1540/1541





CONTENTS

Chapter One

1.1 Scope

In this chapter, a desciption is made of the proceedures necessary for servicing the Model 1540/1541 Floppy Disk Drive.

1.2 Unpacking

Special care should be exercised during unpacking not to damage the unit.

Unpacking proceedures are as follows:

a) Remove cardboard sleeve from styro-foam box

b) Open 'styro-foam' box and remove drive

c) Check the drives front door for proper operation

```
*********************************
*                               *
*            Caution            *
*                               *
*  Do Not Use Magnetized Tools  *
*                               *
*********************************
```

1.3 Protection against noise

A week signal from the media is detected in the head section of the drive. Hence, do not install the drive near a TV set or other areas where electromagnetic noise is generated. (i.e. motors, air-conditioners, etc)

1.7 Input/Output Cable

The length of the cable between the host and the drive (between the host and the last drive when the drives are daisy chained) should not exceed 5 meters (16 feet).

1.8 DC power source

The drive is powered by a internal power supply providing the drive with +12V and +5V.

1.9 Initial inspection

The drive can be briefly inspected for its operation by the following proceedure. Install the drive, connect the power and I/O cables. Turn drive on and make sure the front panel power lamp is on. Proceed to step 2.2.

1.10 Outline of functions

The 1540/1541 Minifloppy Disk Drive mechanism is composed of the data read/write head, track positioning mechanism, spindle drive mechanism and eject mechanism.

1.11 Read/Write Head

The Read/Write head uses a glass-bonded, ferrite/ceramic head. Track-to-track erasing is accomplished by the straddle erase method. The surface of the Read/Write head is mirror-ground to minimize weear of the head and media. Also, the head is desighned in such a way that the maximum signal can be obtained from the media surface.

1.12 Track positioning mechanism

Positioning of the Read/Write Head is accomplished by a stepping motor and steel belt. The stepping motor rotates clockwise or counter-clockwise by two steps per track. The control circuit on the logic board selects the direction and number of step to the desired track.

1.13 Spindle drive mechanism

The spindle drive motor operates on 12 VDC and turns the spindle, through a belt drive, at 300 revolutions per minute. The speed of the drive motor is controlled by a feedback signal from a tachometer which is housed in the drive motor assembly. The feedback signal controls a servo amp that supplies the 12 VDC drive current.

1.14 Eject mechanism

When the media is inserted in the Disk Drive and the door is closed the media is clamped by the spindle and hub. At this time the ejector mechanism is loaded by the insertion of the disk and locked. When the door is opened, the ejector mechanism is unlocked and the media pops out of the door.

Chapter Two

2.1 Mechanism Explanation

The 1540/1541 mechanism is installed in the system horizontally, however the drive will fuction if mounted vertically. The mechanical parts of the drive include an aluminum chassis, a stepping motor, head positioning assembly, drive motor, a hub and spindle assembly for centering and retaining the media during operation. The magnetic head is of a glass ceramic construction.

2.2 Function explanation

The drive is itself an independent memory device. The drive is composed of a media clamp rotating mechanism, ahead positioning mechanism and an eject mechanism. When the front door opens, the media can be inserted. All positioning operation excluding insertion and removal of the media are controlled by the internal guide mechanism. Closing the front door causes the media clamp mechanism to operate. Two operations are performed in the following order:

a) The media is centered.

b) The media is clamped and retained between the spindle and the hub.

The spindle and hub rotate at 300 r.p.m. through a closed-loop control circuit employing a D.C. motor/tachometer. It is important that the relationship between the head and the media is maintained correctly during operation. For this purpose, a pressure pad is used to hold and press down the media(about 12g) from the opposite side of the head, to maintain the correct contact with the head. This head assembly is coupled by a metal band to a four phase stepping motor the performs the track positioning. One step of the stepping motor corresponds to a 1/2 track movement. Use of a high-speed stepping motor and metal band drive, this series of disk drives can perform access operations at a very high speed.

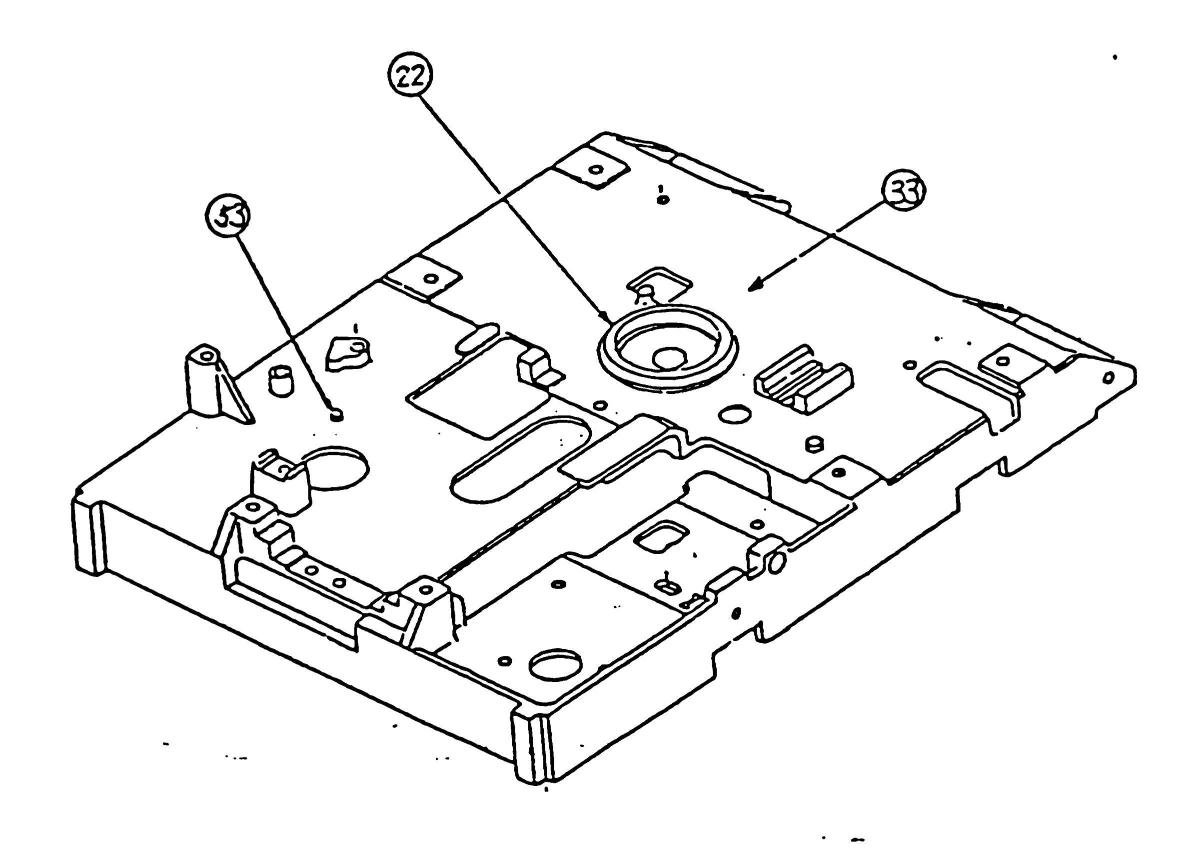
2.3 Assembly procedure

2.3.1 The housing assembly; install the eject pin and the spindle.

2.3.2 The housing assembly; on the reverse side install the spindle pulley.

2.3.3 FIG 1, The housing unit.

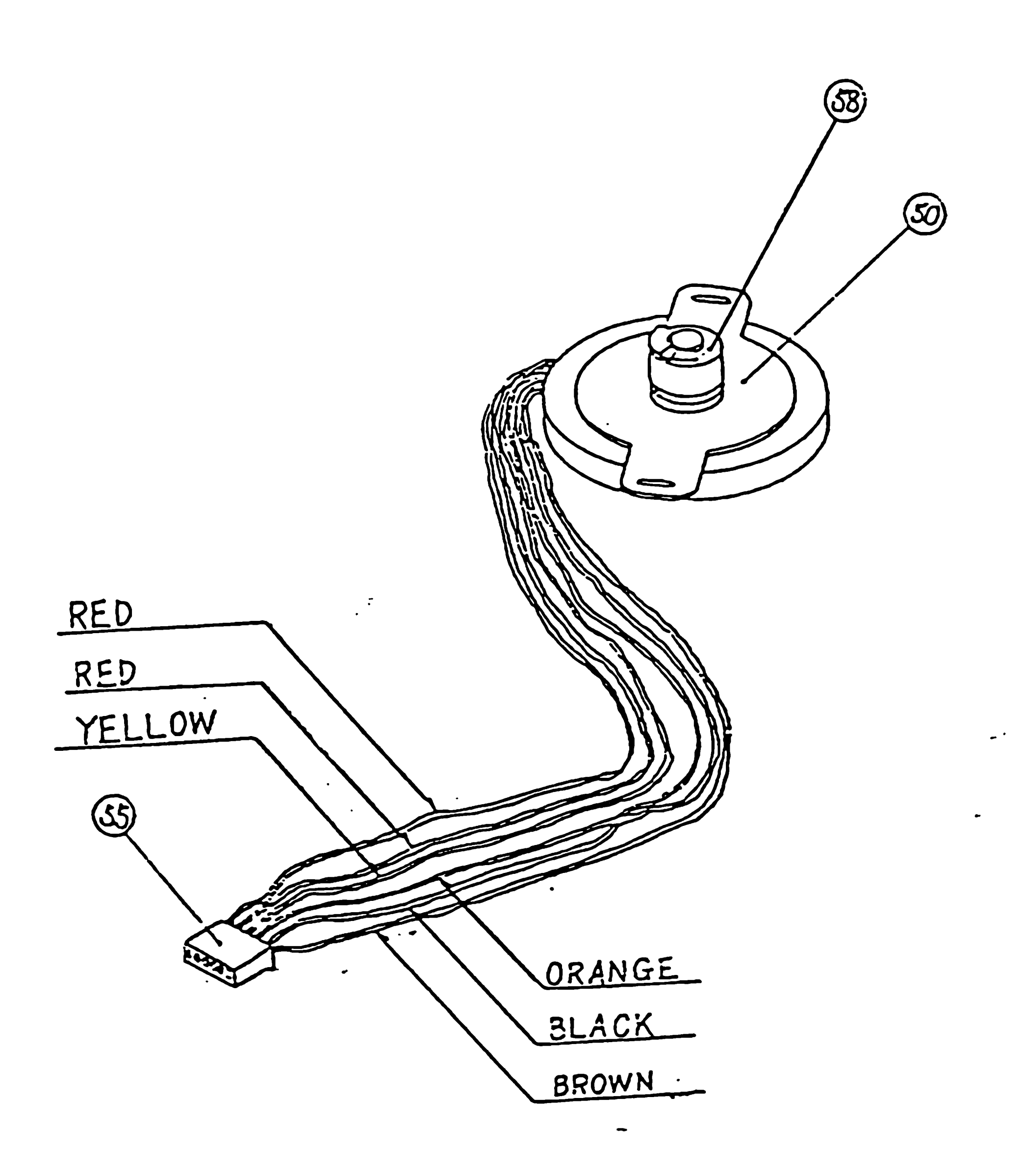
Part	Desciption
22	spindle
33	housing assembly.
53	eject pin



2.3.4 The stepping motor assembly; install the stepping pulley.

2.3.5 FIG 2, The stepping motor unit

Part	Description
50	stepping motor assembly
55	connector housing
58	stepper pulley



2.3.6 The D.C. motor assembly; install the motor pulley.

2.3.7 FIG 3, D.C. motor and control PCB

Part	Description
44	motor control PCB
48	D.C. motor
51	connector housing
59	D.C. motor pulley

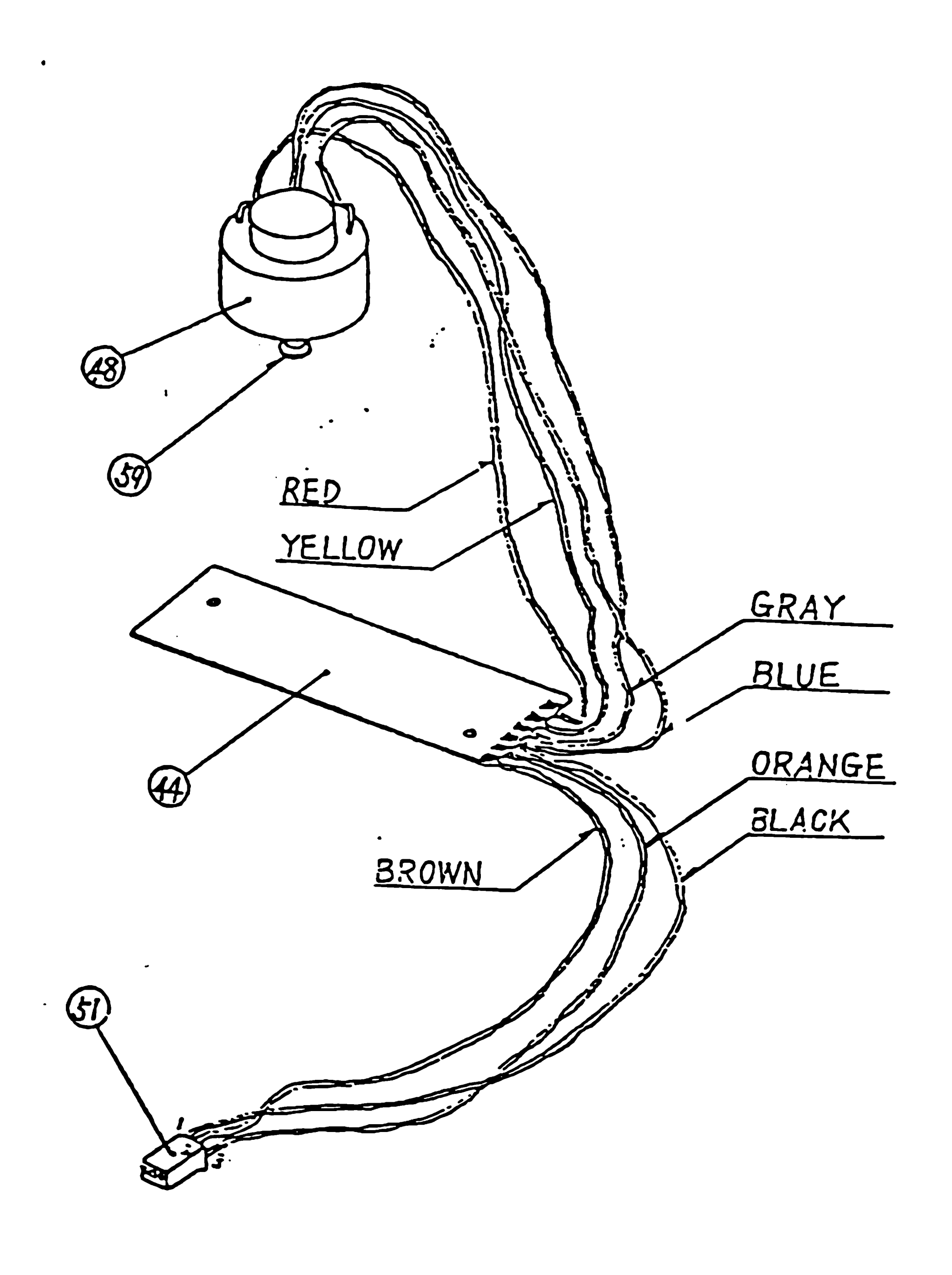


FIG. 6

Part	Description	Part	Description
20	binder screw	37	washer
21	diskette guide	38	eject spring
28	LED clamp	39	eject plate
29	front panel	40	slider
30	Flush screw	43	diskette guide
31	LED assembly	52	connector housing
32	LED holder ring		

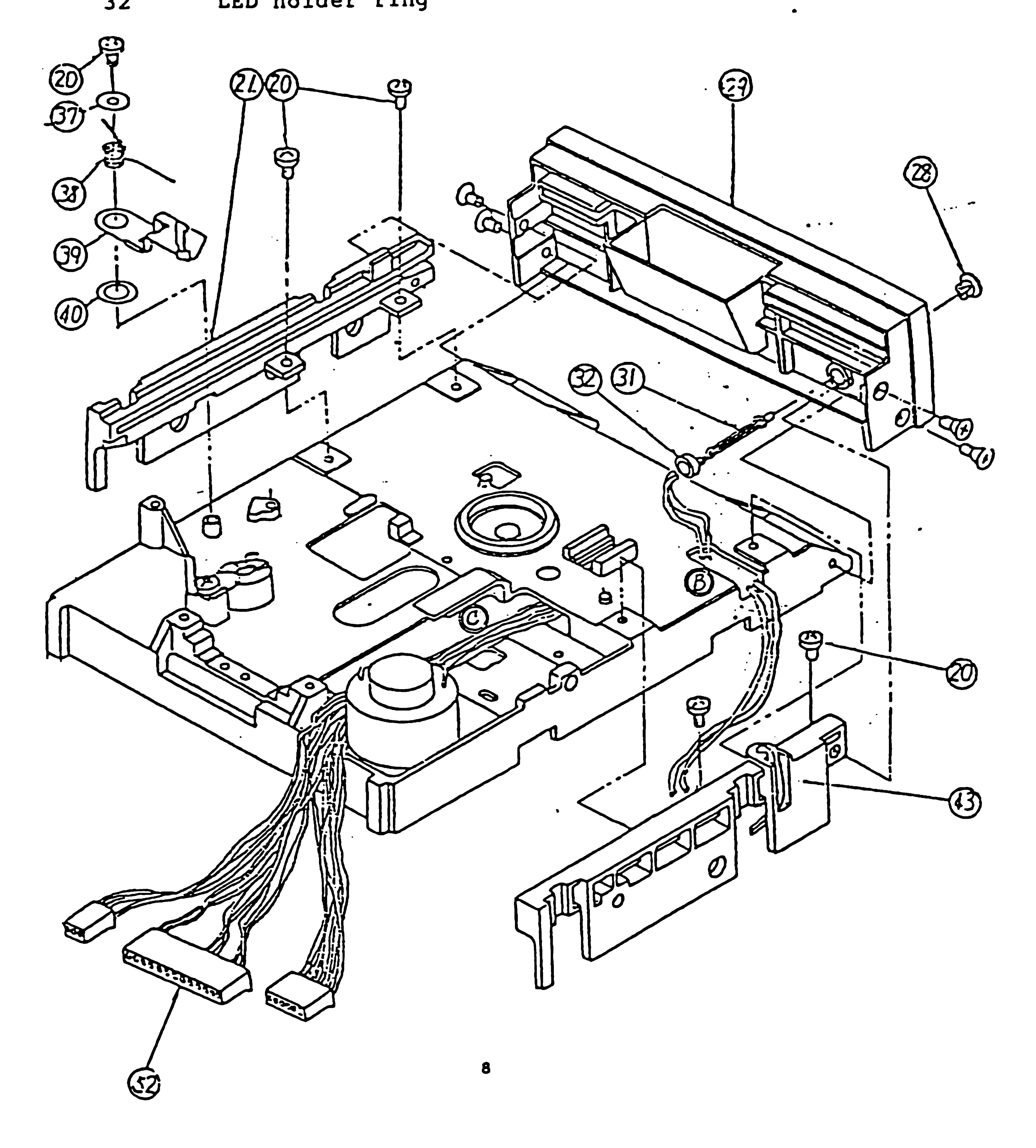




FIG 7.

Part	De :iption
15	binder screw
18	binder screw
24	tension pulley
25	guide shaft keeper
26	guide shaft
34	metal band
35	washer
36	head assembly
56	tension spring

FIG 8

Part	Description
20	binder screw
45	cable clamp
49	cable ties

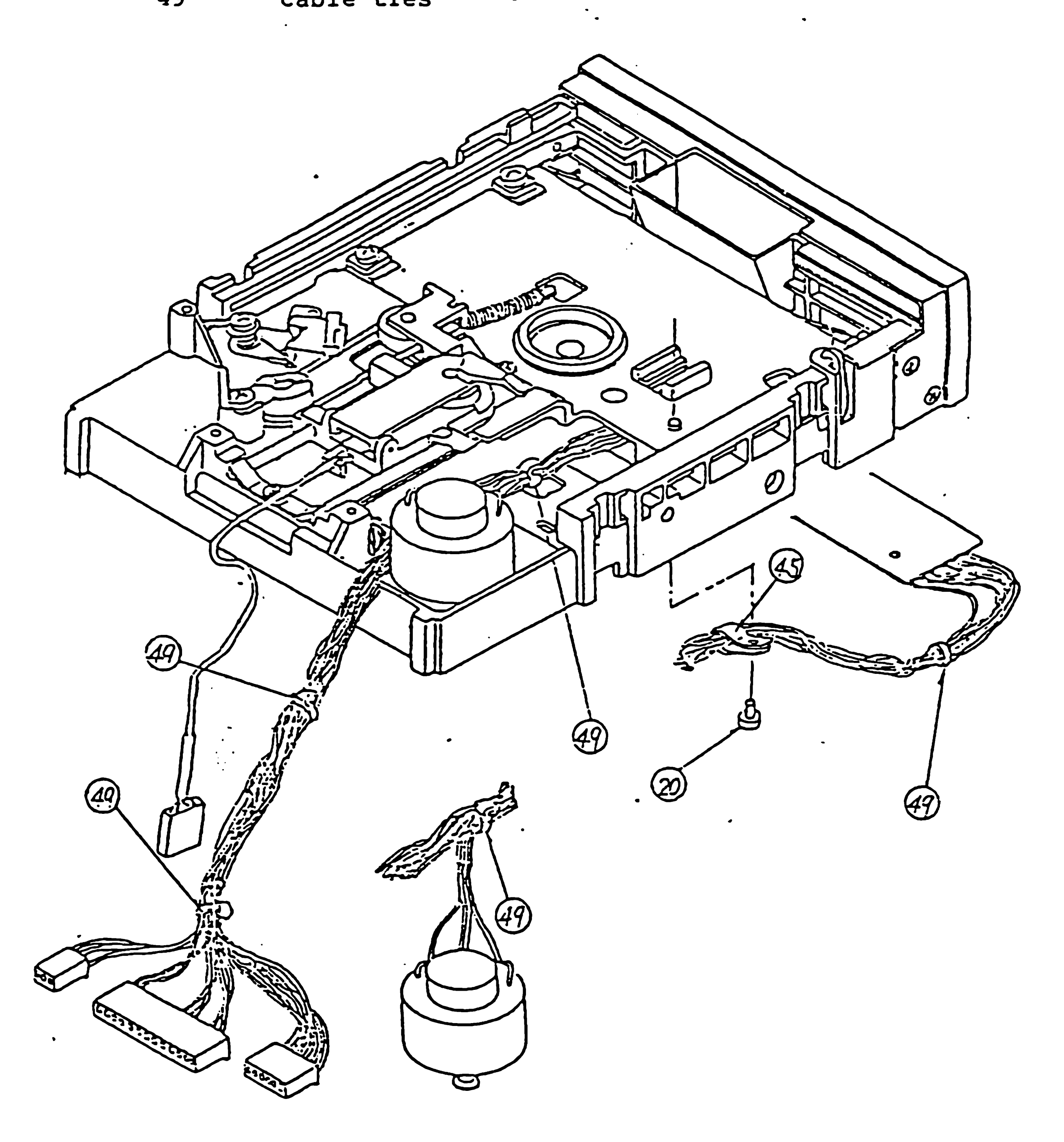
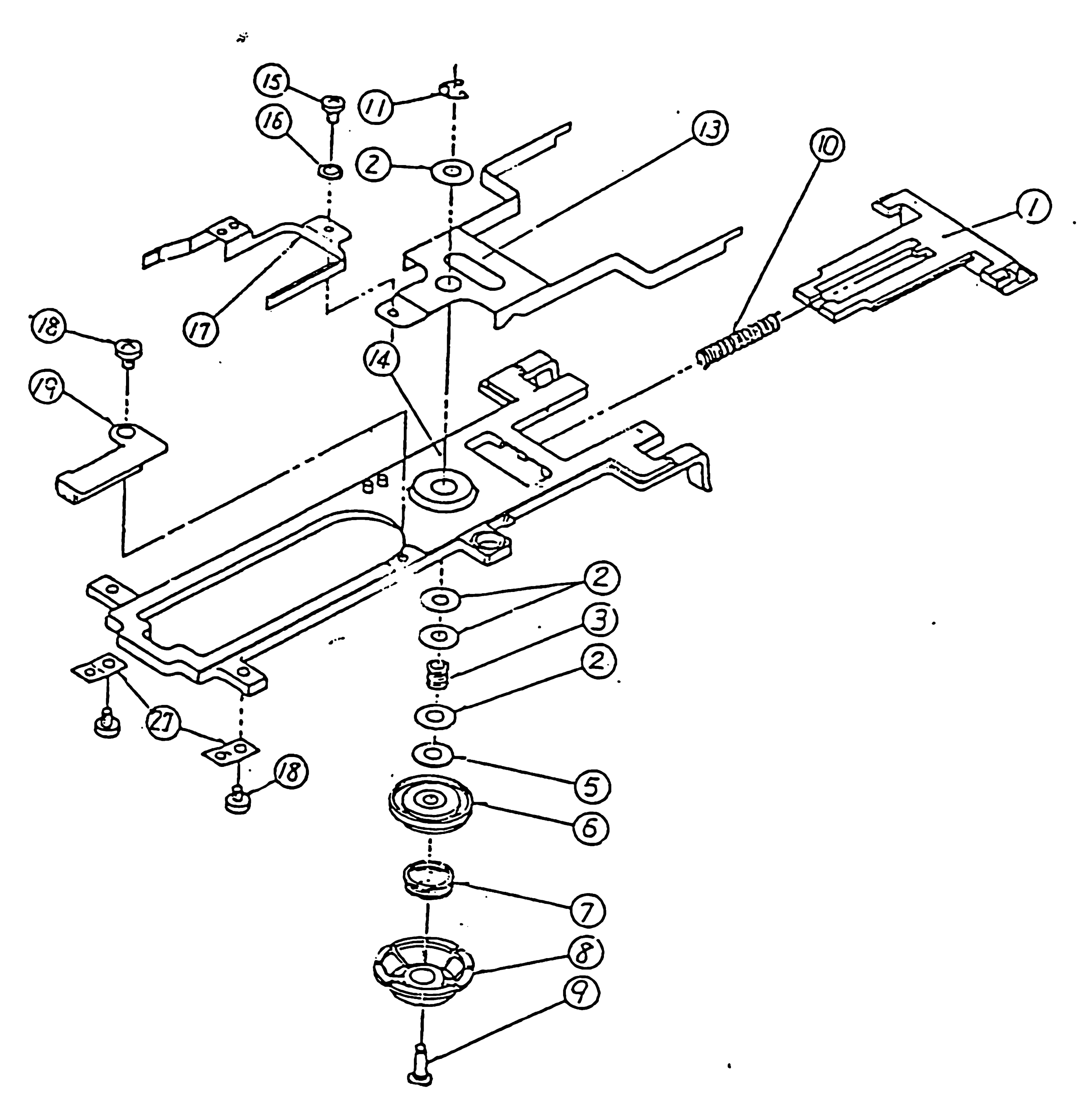


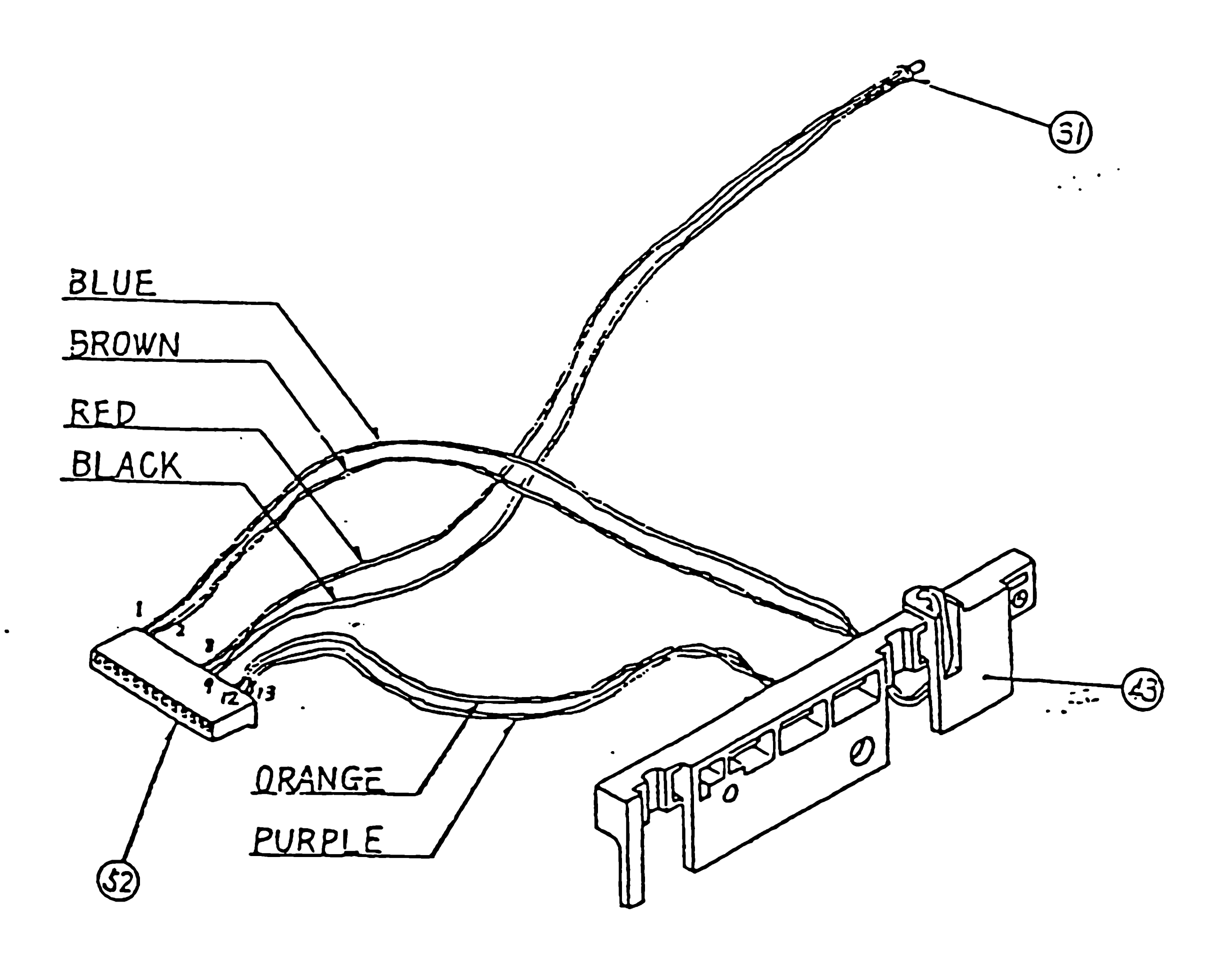
FIG 9

Part	Description	Part	Description
1	door assembly	13	hub support
2	collar	14	hub frame
3	clamp spring	15	binder screw
5	thrust washer	16	spring washer
6	collet assembly	17	arm support assembly
7	hub spring	18	binder screw
8	hub	19	pad plate assembly
9	hub shaft	27	hinge spring
10	door spring	60	collet
11	E-washer	61	collet bearing



2.3.8 FIG. 4, Diskette guide, LED assembly and connector housing.

Part	Description
31	LED assembly
43	diskette guide
52	connector housing



2.3.9 Secure the D.C. motor from the reverse side of the housing assembly with two screws.

2.3.10 Put the motor control PCB into hole 'A' and serure it with two screws.

2.3.11 Secure the stepping motor with two screws.

2.3.12 Secure the carraiage stopper with a screw.

2.3.13 Install the connector housing '52' into the hole 'B' and remove through hole 'C'.

2.3.14 Sercure the two diskette guides '21' and '43' with two screws each.

2.3.15 Install the LED holder in the front panel.

2.3.16 Insert the LED assembly into the LED holder ring.

2.3.17 Install the led into the LED holder, then push the LED holder ring onto the LED holder.

2.3.18 Attach the front panel with four flush screws.

2.3.19 Secure the eject plate with a screw.

2.3.20 Wind the metal band around the tension pulley.

2.3.21 Insert the guide shafts into the head assembly. Install the tension pullet as shown in figure 8

2.3.22 Secure the guide shaft keepers by two screws each.

2.3.23 Wind the metal band around the stepper pulley and secure it with a screw to the stepper motor pulley.

2.3.24 Hook the spring to the tension pulley and install unit in the slot in the housing assembly.

2.3.25 Hook the opposite end of the spring to the housing assembly.

2.3.26 Fasten cable ties to tne cables.

2.3.27 Secure the cable clamp with a screw as shown in FIG 8.

2.3.28 Secure the arm support assembly with a screw to the hub support.

2.3.29 Insert the hub shaft into the hub, the hub spring, the collet assy, the thrust washer, the collar, the clamp spring and two collars.

2.3.30 Insert the hub shaft into the frame and the hub support and fasten it at the E-washer.

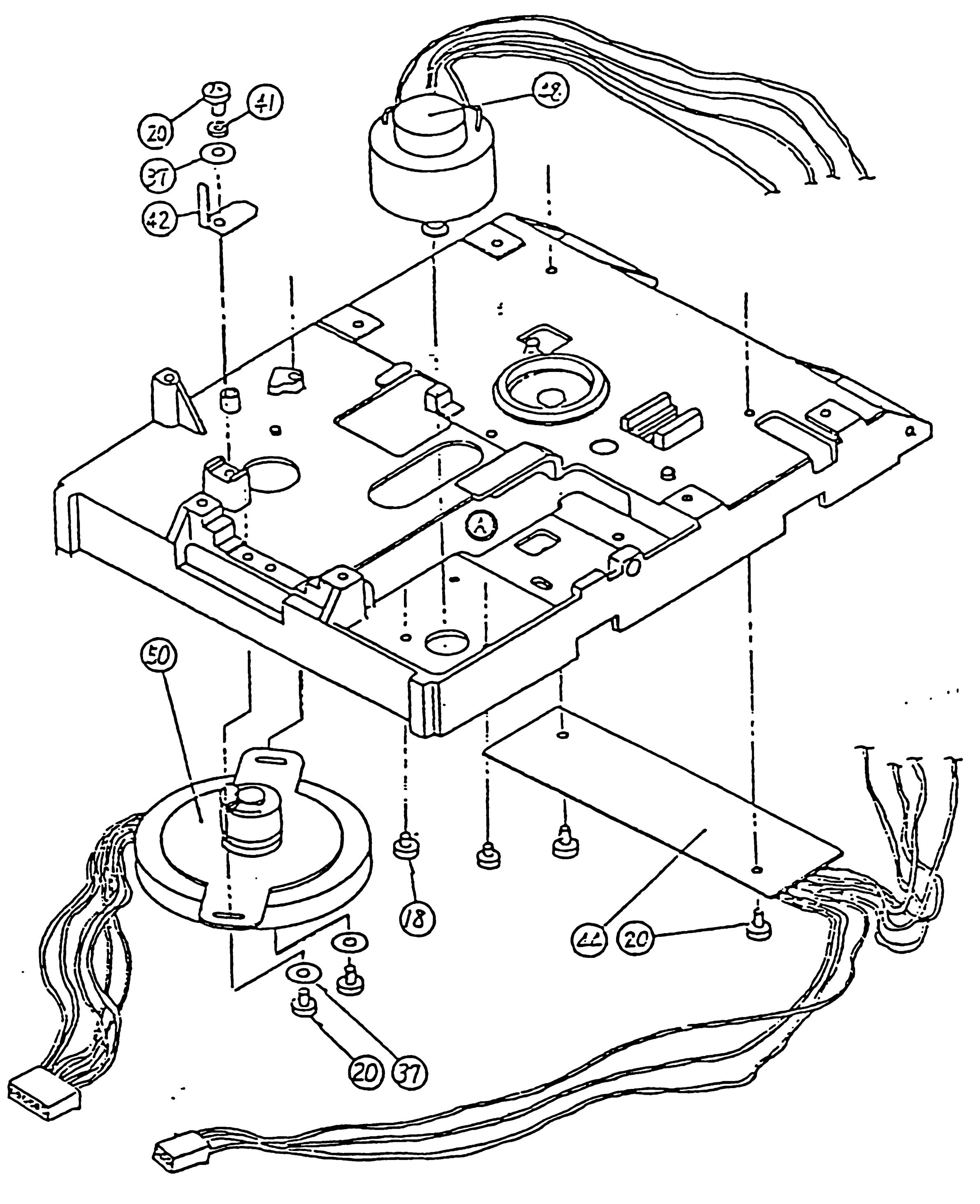
2.3.31 Set the door assembly and the door spring at the hub frame.

2.3.32 Secure the pad plate assembly with a srew to the frame at the location shown in FIG 9

2.3.33 Secure the two hinge springs with two srews each.

FIG. 5

Part	Description
18	binder screw
20	binder screw
37	washer
41	spring washer
42	carriage stopper
44	motor control PCB
50	stepping motor assembly

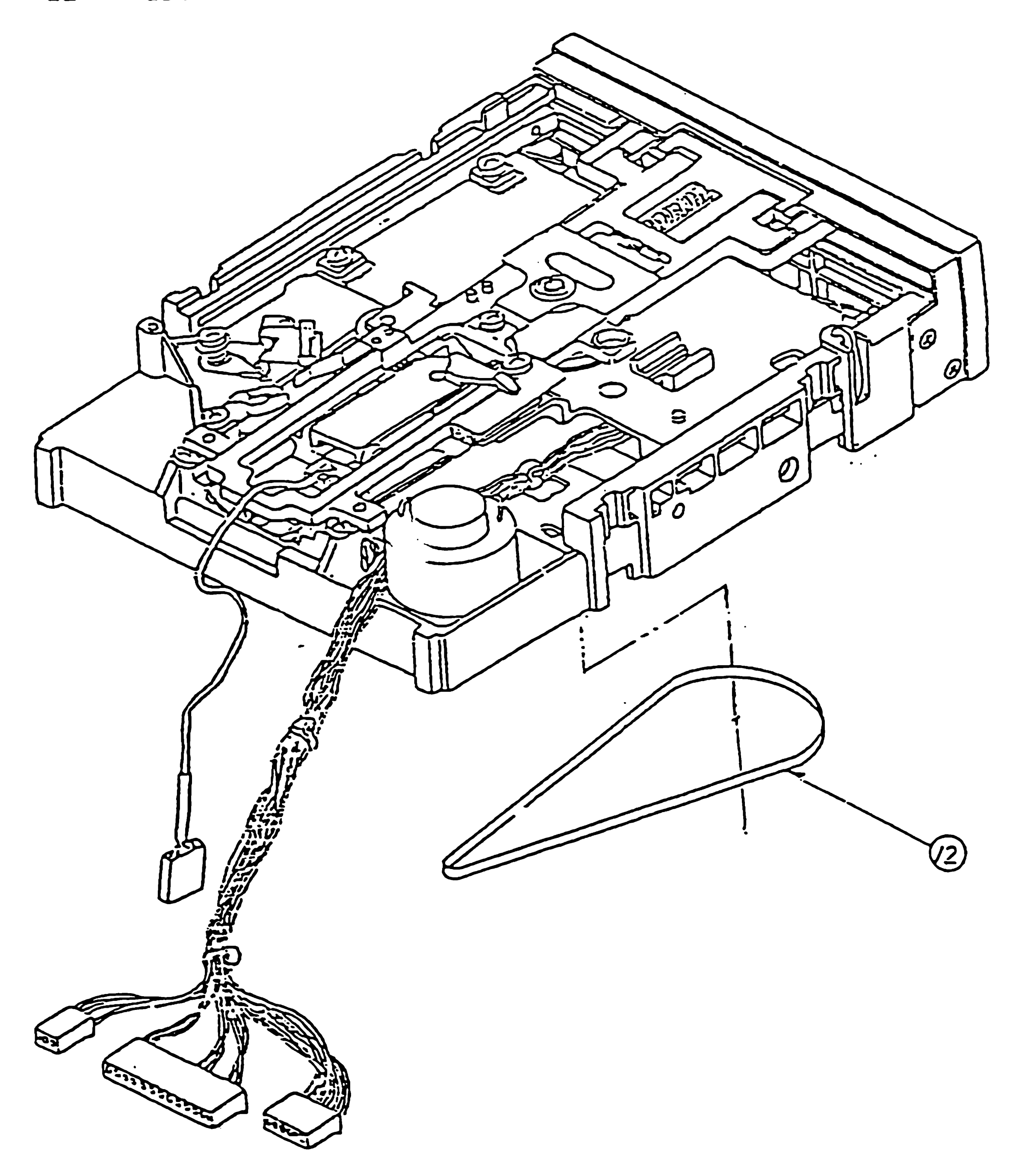


2.3.36 Place the belt over the D.C. motor pulley and partially on the spindle pulley.

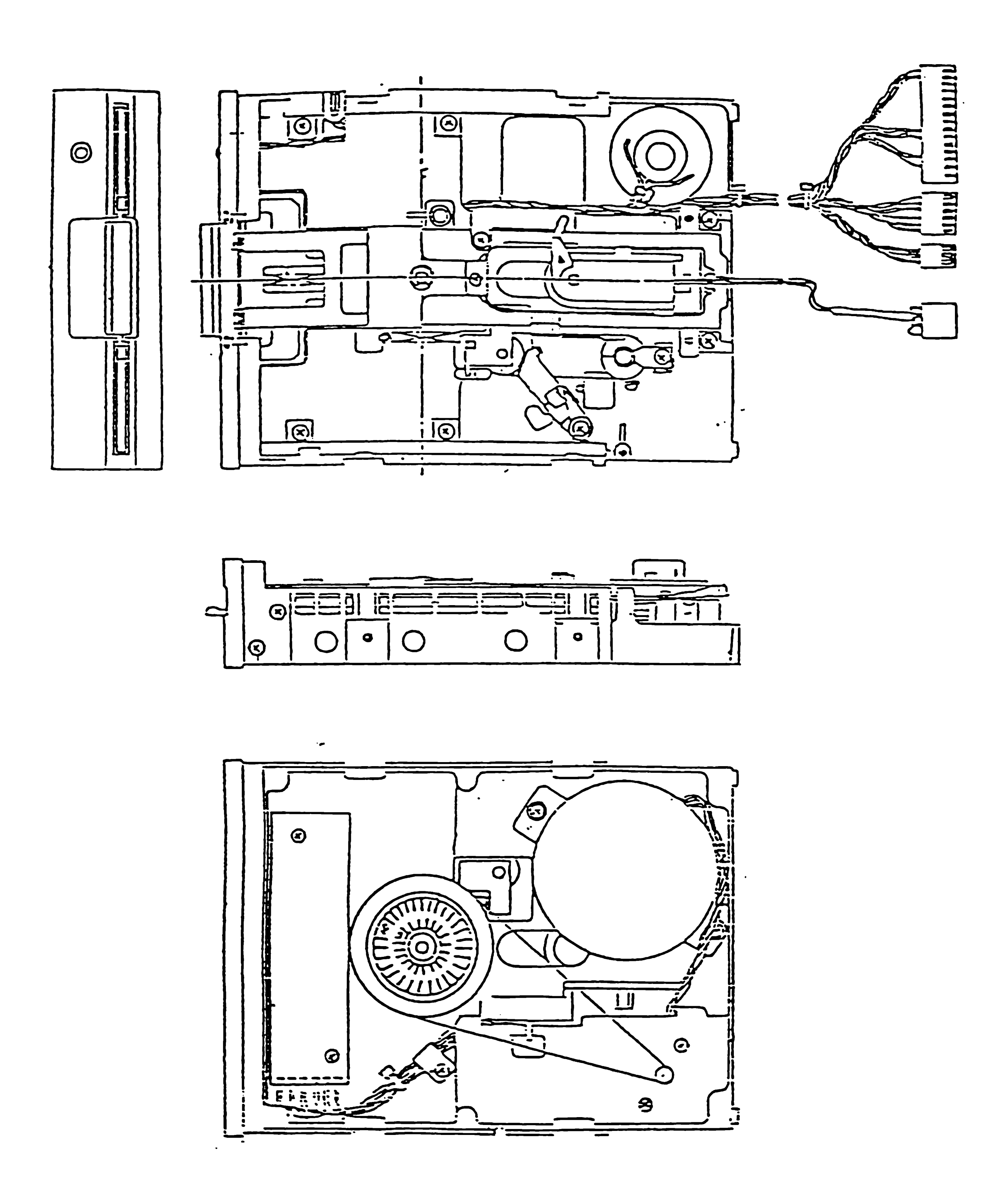
2.3.37 By turning the spindle pulley the rest of the belt will seat completely on the pulley.

2.3.38 FIG 10

Part	Description
12	drive belt



2.3.39 FIG 11; Completed Drive Mechanism



Chapter Three

3.1 Description

Since the disk drive is placed under direct control of the interface and power supply, no special proceeedure is required for starting and operation.

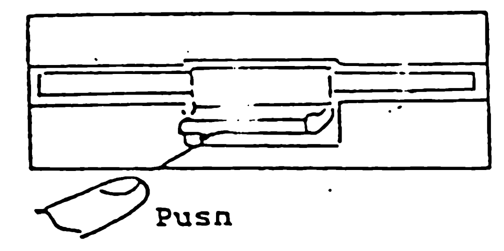
3.2 Operating procedure

Make sure that the power supply and I/O connector are connected, then insert the disk in accordance with the following procedure .

3.2.1 Inserting the media

a) Apply DC voltage to the drive.

b) Open the front door.



c) With the index hole and write protect notch being placed on the left side of the jacket, push the media in, when the media is fully inserted the loacking action can be felt.

d) Push the door downward and close the door so that it is locked firmly

3.2.2 Extracting the media

a) Open the front door. The media will pop out automatically to a position where you can extract it easily.

b) For protection of the recorded data, the media should always be stored in its envelope.

c) Close th door of the drive.

3.3 Media handling procedure

Since the media has been sudjected to awrite operation i naturally contains information, adequate attention must be paid to its handling.

In order to extend the life of the media and eliminate the causes of errors, it is best to take the following steps:

a) When writing something on the jacket label of the media, **do not** use a ball point pen or pencil, use felt-tipped pens.

b) **Do not** hold the edges of the media with paper clips or the like.

c) **Do not** touch the media exposed in the slot of the jacket.

d) **Do not** attempt to clean the media.

e) **Do not** keep the media in the areas where there is a strong magnetic field.

f) The diskette should be kept in its jacket.

g) Special care should be exercised so that the media is kept free from liquid, dust, metal particles, etc.

h) Take care not to exceed the following environmental conditions:

Temperature	10 to 47 °C
Relative humidity	20 to 80 %

3.4 Seek error

Few seek errors will be experienced due to the low stepping rate, less than 12 msec/track. In case of a seek error, however, recalibration of track position can be performed. This can be done by repeatedly stepping the head towards track 0 untill track 0 status is detected.

3.5 Write error

In order to check the quality of the data, perform a read-after-write operation. When data can not be read, rewrite that track and sector once again.

When data can not be read after four such operations track is defefective.

3.6 Read error

What happens quite often when performing a read operation is a soft error. A soft error is defined to be a read error which is recoverable by making ten or less read operations. However, in the event no recovery is made in ten operations, move one step from the track in the same direction as the previous step, then return one step. If this fails to read the data, this error is unrecoverable.

3.7 Description

Periodic maintenance is indispensable so that this type of peripherial equipment operates properly. It is particularly important to periodically clean the head and check the load pad. Repairs and adjustments should be made in accordance with the proceedures below.

3.8 Head Cleaning

Check for excessive dust or magnetic oxide on the load pad. With the door open (do not move upper arm greater that what is provided by opening the front door) clean head with lint free cotton cloth or 'Q-tip' in 91/ isopropyl alcohol. Wipe the head carefully to remove any dust and/or oxide.

3.9 Adjustment Procedure

In case of a malfuction or parts replacement, make the following adjustments. In order to maintain the interchangability of the media between drives it is desirable check each drive against a master alignment diskette.

3.9.1 Track adjustment (radial track)

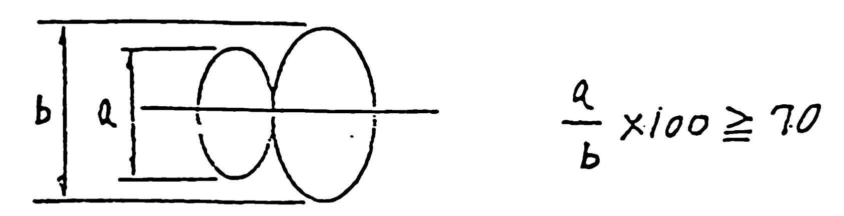
a) Connect I/O cable an restore the head to track 00.

b) Insert a 48tpi alignment diskette and close the door.

c) Connect two oscilloscope probes to pin 1 and pin 14 of UH6 (592), set oscilloscope to angbraic add at 50mV/cm and 200 msec/div.

d) Load the head and allow it to seek to track 16, check for cats eye wave form. When the cats eye lobe ratio is 70/ or less, loosen the stepping motor mounting screws, turn the stepping motor to obtain the lobe ratio of 90/ or less.

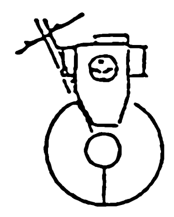
e) After allowing the head to track 34, return it to track 16 and recheck the cats eye. If the ratio is correct tighten the stepping motor screws.



Cats eye lobe ratio

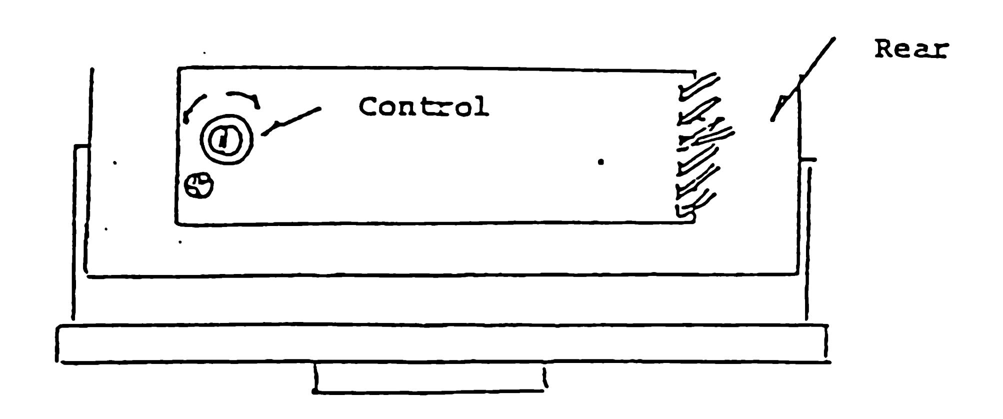
3.9.2 Track 00 adjustment

The drive is not provided with a track 00 sensor. To adjust, let the head over step in the track 00 direction and adjust the liniter postion to obtain a clearance less than 0.25mm - 0.4mm.



3.9.3 Speed control

Turn the variable resistor on the motor control board untill the tachometer disk on the spindle pulley appears stationary when viewed with a fluorescent lamp.



3.10 Limiter Adjustment Procedure

(1) Set the CPU to permit ARY-03 to execute.

(2) Connect the drive to the equipment body (1541).

(3) Switch ON the power to the equipment and insert a medium (dummy) into the drive and close the door.

(4) Press [A] and [RET] keys.

(5) Loosen the limiter screw a 1/4 turn, counterclockwise, position the limiter as instructed below, then retighten the screw.

① Move the limiter in ⓐ⇨ direction until is stops.

② Next, move it 0.25 to 0.4mm in ⓑ ⇨ direction.

Hold the limiter using a screwdriver as a lever so that the limiter does not rotate togehter with the screw when it is tightened. (Be careful not to damage the steel belt with the screwdriver.) As a criterion for screw tightening, the screw should not move when a torque of 5 kg-cm is applied to it.

(6) Press [R] key and check the clearance. (Clearance_____)

(7) Press [D] key and check the sound.

* Sound checking method: Shall be the same evaluation method as that when making a bump test.

(8) Check the clearance.

* A 0.25-mm clearance gage shall be inserted into the clearance and a 0.4mm clearance gage shall be not inseterted.

When OK: Press [RET] key.

When NG: Press [N] and [RET] key.
Retry beginning (4).

(9) Press [SP] key.

* Visually confirm that the pulley moves towards the 1TK OUTER side and contacts the limiter.

When OK: Press [RET] key.

When NG: Press [N] and [RET] key.
Retry beginning (4).

(10) Press [SP] key.

* Visually confirm that the limiter does not move towards the outer side.

  When OK: Press [RET] key.

  When NG: Press [N] and [RET] key.

  Retry beginning (4).

(11) Remove the medium and switch OFF the power (1541 side only).

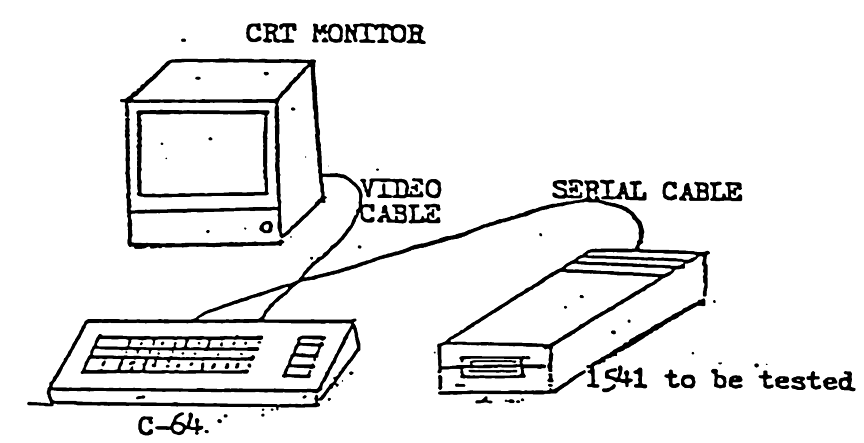
(12) Disconnect the connector.

3.11 DIAG TEST(BURN-IN) Procedure

3.11.1 Instrument for this test

Conputer	:	C-64
CRT Monitor	:	1510 or 1701 or the equivalent
Floppy Disk	:	1541
PRG.Diskette	:	"DIAG" Diskette

3.11.2 Connection



3.11.3 Procedure

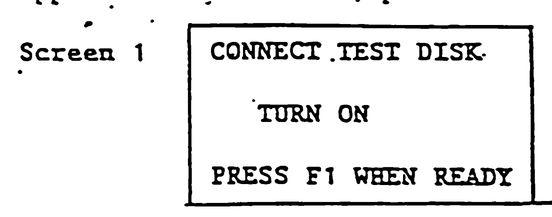
(1) After setting the PRG diskette in to 1541 press keys as follows.

LOAD"DIAG*", 8

After the display of "READY" press key -[R][U][N][RETURN]

After the following appears on the screen, pull out the PRG dislette and store it.

Screen 1



CONNECT TEST DISK

TURN ON

PRESS F1 WHEN READY

(2) The following appeass approx. 20 seconds after [F1] key is pressed when the disket is not set. Confirm that the red LED lmap of the test floppy disk is blinking.

Screen 2

```
1541   DIAG START

   SEE     LED

   LED BLINK ?

   YES=PRESS F1

   NO =PRESS F3
```

(3) After Confirmation of the LED lamp the following appears when [F1] key is pressed. Remove the Serial cable from the floppy disk and set the floppy disk to be tested next. The screen 1 will be displayed after [F1] key is pressed again.

Screen 3

```
REMOVE SERIAL CABLE

CONTINURE DIAG. TEST?

    YES=PRESS F1

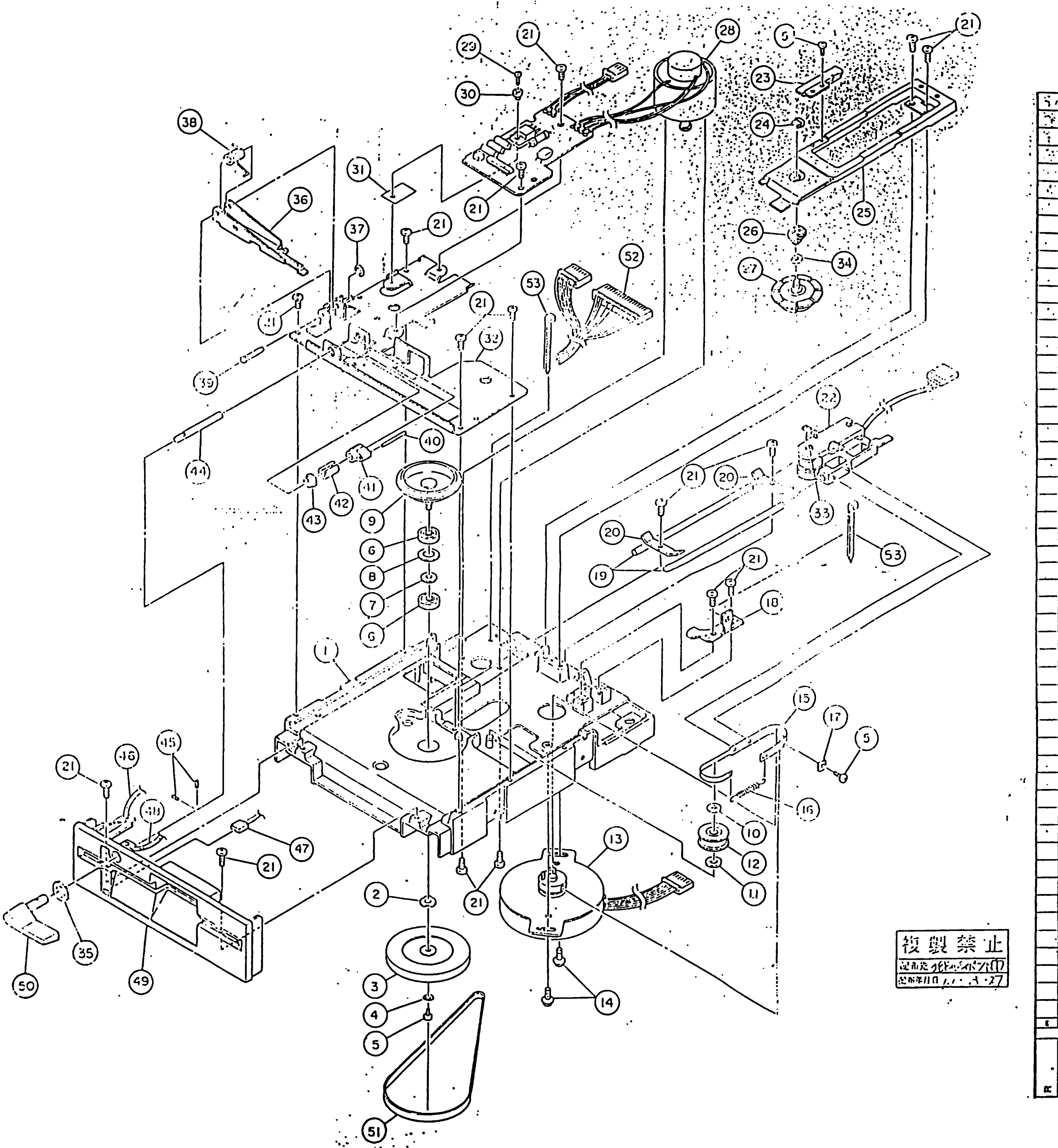
     NO=PRESS F3
```

(4) Under the following burn-in condition the floppy disk whose LED lamp blinks by the above procedure. The floppy disk is qualified when the LED lamp still blinks in the same way after the burn-in.

3.11.2 PARTS LIST FOR 1541

No.	Name	P/No.	Q'ty
1	Rating Label	1540030-01	1
2	Warning Label	1010019-01	1
3	FCC ID Label	320955-02	1
4	Screw with Ext. Tooth Metric, M3	325541-05	4
5	Voltage Regulator	901528-04	1
6	Insulation Mylar	904914	2
7	Heat Sink	1540011	2
8	Heat Sink	1540011	1
9	Screw with Ext. Tooth Metric, M3	325541-02	7
10	ROM	901229-03	1
11	ROM	325302-01	1
12	RAM	325502-03	1
13	CPU	901435-01	1
14	VIA	901437-01	2
15	Logic Array	325572-01	1
16	Top Case Assy	251185	1
17	Plate Model	1540052	1
18	Shield Cover	1540013	1
19	Shield Cap	4022047	2
20	Screw with Ext. Tooth Metric, M3	325541-02	2
21	PCB Assy	1540048-01	(1)
22	Tubing Insulation	905477-02	4
23	Lock Washer, External Toothed Metric	905655-03	2
24	Nut	905960-03	4
25	Screw with Ext. Tooth Metric, M4	325542-02	2
26	Switch Seesaw	904509-01	1
27	Screw Flat Head	906803-02	2
28	Fuse Slo Blo		1
29	Fuse Holder		1
30	Power Chassis	251153	1
31	Tapping Screw	906883-03	6
32	Bottom Case	1540015	1
33	Power Transformer	1540009-	1
34	Screw Metric, M5	325548-04	4

No.	Name	P/No.	Q'ty
35	Inch Pan Head Screw	906610-03	4
36	LED Assy	1540003-02	1
37	Lamp Holder Set	903820-01	1
38	Pan Head Screw	906800-02	4
39	Foot Self Adjesive	950150-01	4
40	Drive Mechanism	325519-02	1
41	Styrofoam Top	1540019	1
42	Poly Bag	1540025	1
43	Main Assy	1540005-06	(1)
44	Poly Bag	4022044-02	2
45	Power Cord		1
46	Cable, 6P DIN	1540027-01	1
47	User Manual	1540031-02	1
48	Diskette Demo	1540024-02-ZX	1
49	Styrofoam Bottom	1540020	1
50	Inner Carton	1540032-01	1
51	Voltage Regulator	901528-03	1
52	Power Conncetor		1
53	Label, FCC Class B	325553	1

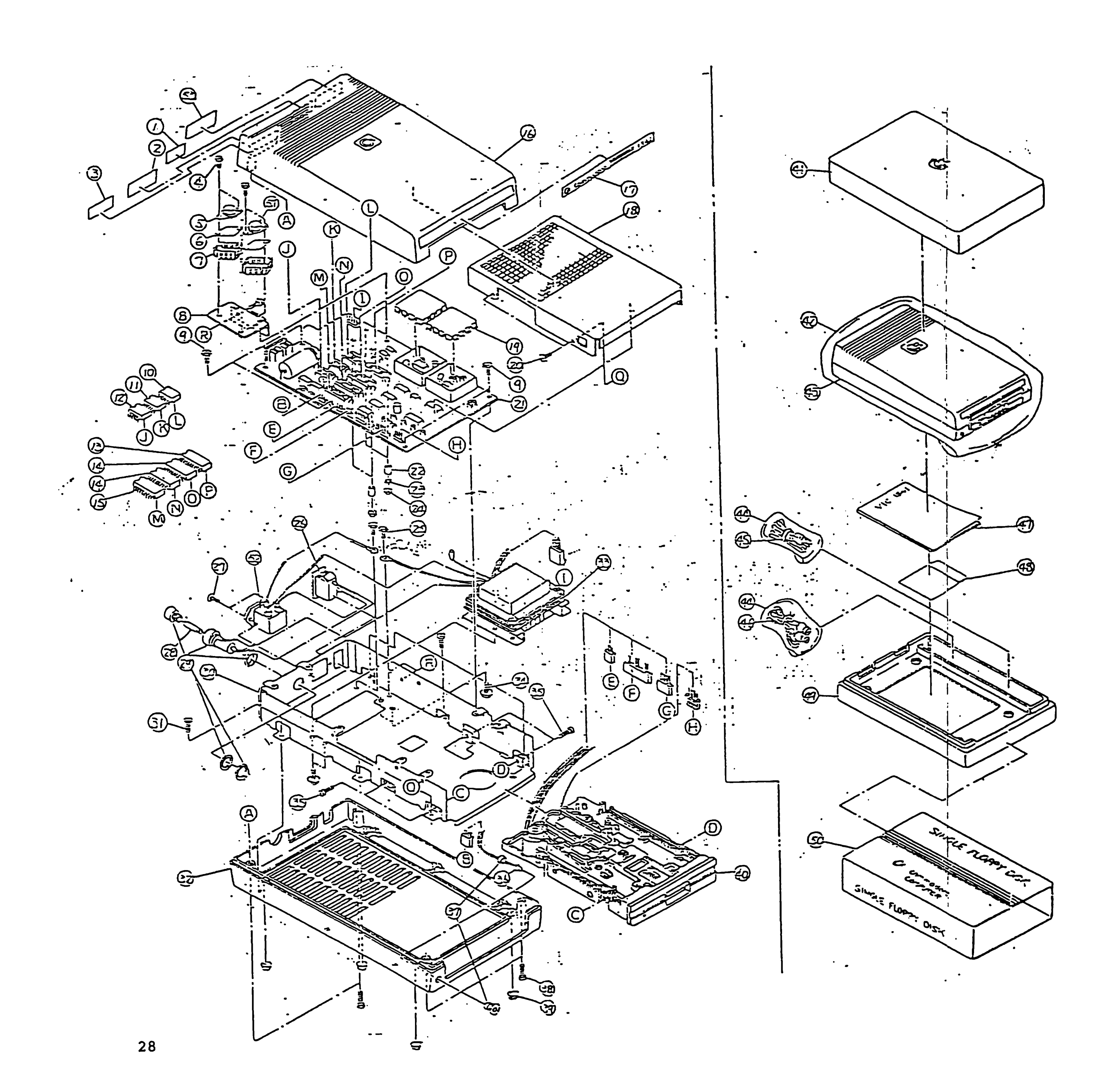


	No.	図番	部品名	摘要
2A	53	690073	FIXTURE BAND	
1A	52	690074	CONNECTOR HOUSING	
1A	51	690004	DRIVE BELT	
1A	50	690010	DOOR LEVER ASSY	
1A	49	690012	FRONT BEZEL	
1A	48	690096	WPLED ASSY	
1A	47	690094	LED ASSY	
1A	46	690095	WPPT ASSY	
2A	45	690060	SET SCREW HEXAGON	M3 ℓ・3
1A	44	690035	CRANK SHAFT	
1A	43	690037	SPACER	
1A	42	690036	COLOR	
1A	41	690033	CAM	
1B	40	690045	PARALLEL PIN	ℓ・20
1A	39	690030	CARRIER B PIN	
1B	38	690031	CARRIER SCREW	
1A	37	690056	RETAINING RING A	
1A	36	690028	CARRIER B PLATE	
1F	35	690026-F	THRUST WASHER	
1A	34	690099	COLLET WASHER	
1A	33	690048	PAT	
1A	32	690027	CARRIER BASE	
1A	31	690072	INSULATE SHEET	
1A	30	690071	INSULATE RING	
1A	29	690164	CROSS RECESSED SCREW	M2 ℓ・6
1A	28	690104	D MOTOR ASSY	
1A	27	690091	COLLER ASSY	
1A	26	690269	COLLET SPRING	
1A	25	690089	CARRIER ASSY	
1C	24	690056	RETAINING RING E	
1A	23	690090	PAT ARM ASSY	
1A	22	690080	CARRIDGE 2 ASSY	
16B	21	690005-B	PAN HEAD SCREW	M3 ℓ・4
2A	20	690043	GUIDE BAR CLUMP	
2A	19	690042	GUIDE BAR	
1A	18	690038	STOPPER	
1A	17	690041	BELT CLUMPPER	
1A	16	690040	STEEL BELT SPRING	
1A	15	690039	STEEL BELT	
2A	14	690102	CROSS RECESSED SCREW	M3 ℓ・4
1A	13	690079	STEPPING MOTOR ASSY	
1A	12	690070	PULLEY B ASSY	
1E	11	690026-E	THRUST WASHER	
1D	10	690026-D	THRUST WASHER	
1A	9	690052	SPINDLE HUB ASSY	
1A	8	690051	RETAINING RING C	
1A	7	690065	INNER WASHER	
2A	6	690066	BEARING	NTN 695ZZ
4D	5	690005-D	PAN HEAD SCREW	M2.6 ℓ・3
1A	4	690101	EXTERNAL TOOTHED WASHER	
1A	3	690053	SPINDLE DRUM	
1A	2	690055	WAVE WASHER	
1A	1	690076	FRAME UNIT	

第三角法

D 500 1541 FDD
SCHEMATIC

NEWTRONICS





MODEL NO.	FDM2111-B2
TITLE	EXPLODED VIEW

ALPS ELECTRIC CO., LTD.

NO.	PART NO.	NAME	NO.	PART NO.	NAME	NO.	PART NO.	NAME
1	BH117-A	Door Assy.	25	HY616	Guide Shaft Keeper	49	GR123	Band
2	HY623	Collar	26	EY142	Guide Shaft	50	QY145-A	Stepper Assy.
3	WS114	Clamp Spring	27	HY712	Hinge Spring	51	BG126	Connector Housing
4	GW115	Wave Washer	28	BG111	LED Holder	52	BG127	Connector Housing
5	GW114	Thrust Washer	29	BH127	Front Panel	53	——	——
6	BJ122-A	Collet Assy.	30	2A121064	Screw	54	——	——
7	WS142	Hub Spring	31	DE111-AA	LED Assy.	55	——	——
8	BJ112	Hub	32	BG211	LED Holder Ring	56	——	——
9	EY114	Hub Shaft	33	VY119	Housing	57	——	——
10	WS171	Door Spring	34	GR134	Steel Belt	58	——	——
11	2L003001	E-Washer	35	GW118	Washer	59	——	——
12	GR111	Drive Belt	36	QY124-C	Head Assy.	60	2A271030	Screw
13	HY581	Hub Support	37	2A331050	Screw	61	2LFD0011	Washer
14	FY117	Hub Frame	38	WS157	Eject Spring	62	——	——
15	2A151040	Screw	39	HY532-A	Eject Assy.	63	——	——
16	2G102602	Washer	40	GW123	Poly Slider	64	——	——
17	HY582-A	Arm Support Assy.	41	2A341060	Screw	65	——	——
18	2A132040	Screw	42	HY551	Carriage Stopper	66	2M313001	C-Washer
19	HY625	Collar	43	BG262-A	Disk Guide-R Assy.	67	GP114	Eject Pin
20	2A131050	Screw	44	PM117AB	Motor Control P.C.B	68	——	——
21	BG261-AH	Disk Guide-L Assy.	45	GR152	Cord Holder	69	——	——
22	EY182	Spindle Unit	46	UP512	Spindle Pulley	70	——	——
23	GU127	Spindle Bearing	47	GT111	Tacho Disk	71	JS482	Pad Holder
24	UP533-A	Tension Pulley Assy.	48	QY112	D.C Motor	72	GS112	Pressure Pad
						73	2A151030	Screw
						74	GS117	Pad

ZONE	SYMB.	DATE	APPD.	CHKD.	DSCD.	APPD.	CHKD.	DSCD.	SCALE	MODEL NO.
						Feb 5 '84	Feb 2 '84	Feb 2 '84 A.TAKAHASHI		FDM2111 -B2

TITLE: EXPLODED VIEW

DOCUMENT NO. (2/2)

PART NO.	DESCRIPTION
250448-01	PCB ASSY, 1541B

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
1		PRELIMINARY RELEASE	8/15/84	S. Kitayama
2		REVISED	8/29/84	S. Kitayama
3		REVISED	9/13/84	S. Kitayama
4		REVISED	11/21/84	S. Kitayama
5		ADD ITEM 101 (INSULATION SPACE SHEET)	12/11/84	S. Kitayama
6		REVISED	1/11/85	T. Tsuda
7		REVISED PER ECO 90012	1-22-85	[illegible]
8		REVISED PER ECO 90018	1-28-85	[illegible]
9		REVISED PER ECO 860080	2-3-86	N. Yoshimura
10		PILOT PRODUCTION RELEASE	3-7-86	N. Y.

NOTES-UNLESS OTHERWISE SPECIFIED:

1. SHEET 5 OF 5 SIZE B
   ASSY DWG
2. THIS 1541B PILOT PRODUCTION RELEASE IS APPLIED UNTIL THE STOCK OF F.D.D. BY NEWTRONICS (P/NO. 251643-03, -01) IS CLEARED.
3. THE COMBINATION OTHER THAN THE FOLLOWING IS NOT ACCEPTED:
   F.D.D. BY NEWTRONICS:
   P/NO. 251643-03 OR P/NO. 251643-01
   HYBRID-IC: P/NO. 251853-02
   ROM (EP-ROM): P/NO. 251968-01
   J3: SHORT

commodore	TITLE: PCB ASSY, 1541 B	DRAWN BY: N. Hanamura	DATE: 8-15-84	ENGR: [illegible]	DATE: 5-18-85	SIZE: B	DRAWING NUMBER: 250448
		CHKD: S. Kitayama	8-15-84	APPR:			SHEET 1 OF 5

QTY (01)	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
	1						
REF	2	D	251852-01	SCHEMATIC DIAGRAM, 1541B			
	3						
1	4	B	251854-01	PCB, 1541B			
	5						
	6						
1	7	B	901435-01	IC, MPS 6502 CPU	UC2		
2	8	B	901437-01	IC, 6522 VIA	UC1, 3		
	9						
1	10	B	251968-01	IC, 27128 EP ROM	UA2		
1	11	B	325502-03	IC, TMM2016P S-RAM	UA3		
	12						
	13						
1	14	B	251828-01	IC, GATE ARRAY 40PIN	UC4		
1	15	B	251829-01	IC, GATE ARRAY 20PIN	UC5		
S	16	B	251828-02	IC, GATE ARRAY 42PIN	UC4		SUBSTITUTE FOR ITEM 14.
	17						
	18						
1	19	D	251853-02	IC, HYBRID READ AMP/WRITE	UD1		
	20						
2	21	B	901522-06	IC, 7406	UA1, UC6		
1	22	B	901521-30	IC, 74LS14	UB1		
	23						
S	24	B	901521-73	IC, 74LS06	UA1, UC6		SUBSTITUTE FOR ITEM 21.
1	25		902720-01	TRANSISTOR 2SA673	Q2		
2	26		902671-01	2SC945	Q3, 5		
S	27		902693-01	2SC1815	Q3, 5		SUBSTITUTE FOR ITEM 26.
S	28		902693-03	TRANSISTOR 2SC1740	Q3, 5		SUBSTITUTE FOR ITEM 26.
2	29		900756-01	DIODE RECTIFIER, FULL WAVE BRIDGE 1.5A 50V	CR1, 2		KBP-005
6	30		900750-02	RECTIFIER 1N4002	CR3, 4		(11, 12, 13, 14) SEE NOTE [2]
2	31		900850-01	1N4148	CR6, 7		
1	32		325505-02	ZENER 3.3V 500MW	CR5		
S	33		325505-03		CR5		SUBSTITUTE FOR ITEM 32.
S	34	B	900948-06	DIODE, ZENER 3.3V 500MW	CR5		SUBSTITUTE FOR ITEM 32.
	35						
	36						
	37						
	38						

commodore

TITLE: PCB ASSY, 1541B

DRAWN BY: N. Hanamura	DATE: 8-13-84	ENGR: [signature]	DATE: 8-15-84	SIZE: B	DRAWING NUMBER: 250448	REV: 10
CHKD: [signature]	8-15-84	APPR:			SHEET 2 OF 5	

QUANTITY REQD PER PART/DASH NO 01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
1	39	B	325566-01	CRYSTAL MODULE 16MHZ	UD2		
S	40		325566-02	CRYSTAL MODULE 16MHz	UD2		SUBSTITUTE FOR ITEM 39.
1	41		901528-04	VOLTAGE REGULATOR 12V 1.5A	VR2		
1	42	B	901528-03	VOLTAGE REGULATOR 5V 1.2A	VR1		
	43						
2	44	B	325551-01	INSULATION SILICONE TO-3	VR1,2		
	45						
2	46	B	252166-01	CONNECTOR, 6PIN DIN	P6,7		
S	47		325566-06	CRYSTAL MODULE 16MHZ	UD2		SUBSTITUTE FOR ITEM 39.
S	48		-07		UD2		
S	49		-10		UD2		
S	50		325566-11	CRYSTAL MODULE 16MHZ	UD2		SUBSTITUTE FOR ITEM 39.
3	51		904150-06	SOCKET, IC 40PIN	UC1,2,3		
1	52	B	904150-05	SOCKET, IC 28PIN	UA2		
	53						
	54						
1	55	B	251065-04	HEADER ASSY, 2.5PITCH 4PIN	P4		AG-TYPE
1	56		325562-06	6PIN	P5		
1	57		325562-15	15PIN	P3		
2	58		325562-03	2.5PITCH 3PIN	P1,2		
1	59	B	903316-04	HEADER ASSY, 3.96 PITCH 4PIN	P8		
	60						
	61						
1	62	A	251071-18	CAPACITOR, CERAMIC Ⓡ 47pF	C24		
1	63	B	900101-45	ELECTROLYTIC Ⓐ 6800μF 25V	C8		
1	64		900101-32	Ⓐ 4700μF 16V	C7		
4	65		900100-33	ELECTROLYTIC Ⓡ 47μF 16V	C4,6,13,22		
14	66		251073-04	CERAMIC Ⓡ 0.1μF 50V	C3,5,9,10,11,12,14,15,16,17,18,19,21,23		
1	67		251069-08	CERAMIC Ⓡ 1000pF 50V	C20		
2	68	B	900100-32	CAPACITOR, ELECTROLYTIC Ⓡ 1μF 25V	C1,2		
	69						
1	70	B	902442-22	RESISTOR PACK 1K-7	RP1		7ELEMENT 8PIN
	71						
	72						
3	73	B	901550-52	RESISTOR, CARBON 220Ω 1/4W 5%	R1,12,26		
3	74	B	901550-89	RESISTOR, CARBON 150Ω 1/4W 5%	R14,15,17		
2	75	B	901550-01	RESISTOR, CARBON 1KΩ 1/4W 5%	R3,31		
2	76	B	901550-69	RESISTOR, CARBON 1.5KΩ 1/4W 5%	R10,11		

commodore

TITLE: PCB ASSY, 1541 B

DRAWN BY: N. Hanamura DATE 8-15-84
CHKD S. Kitagawa 8-15-84
ENGR. [illegible] DATE 8-17-84
APPR

SIZE B | DRAWING NUMBER 250448 | REV 10

SHEET 3 OF 5

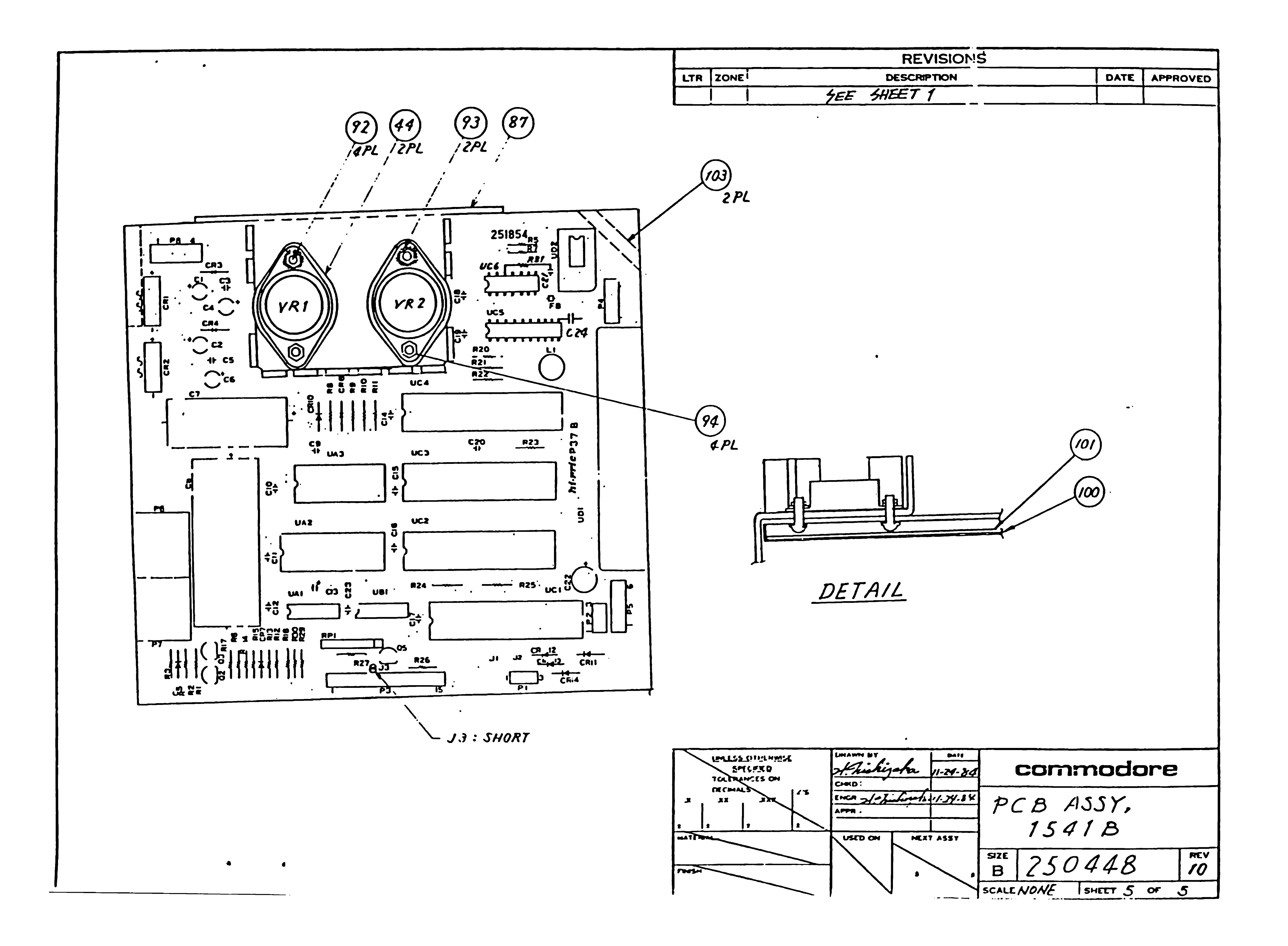
QUANTITY REQD PER PART/DASH NO. 01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
3	77	B	901550-53	RESISTOR, CARBON 2KΩ 1/4W 5%	R23,24,25		
2	78		-23	2.7KΩ	R20,21		
2	79		-17	1.2KΩ	R5,7		
2	80		-20	10KΩ	R13,27		
1	81		-74	82Ω	R2		
2	82		-16	150KΩ	R9,22		
3	83		-22	47KΩ	R6,8,16		
2	84	B	901550-78	RESISTOR, CARBON 3.6KΩ 1/4W 5%	R29,30		
	85						
	86						
1	87	B	251747-01	HEATSINK			
A/R	88	B	904907-01	HEATSINK COMPOUND THERM. CONDUCTIVE			
	89						
	90						
	91						
4	92	B	325541-05	SCREW M3x12 PAN HEAD/EXT TOOTH WASHER			
2	93	B	905655-03	LOCK WASHER M3 EXTERNAL TOOTHED			
4	94	B	905960-03	NUT, HEXAGON M3			
	95						
1	96	B	325563-01	FERRITE BEAD	FB1		
	97						
1	98	B	200018-13	JUMPER WIRE,	CR10		12.5MM
	99						
1	100	C	251927-01	SHIELD PLATE, BOTTOM			
1	101	B	251973-01	INSULATION SHEET, 1551			
	102						
2	103	B	252056-01	INSULATION TAPE, W5			
	104						
	105						
	106						
	107						
	108						
	109						
	110						
	111						
	112						
	113						
	114						

commodore

TITLE: PCB ASSY, 1541 B

DRAWN BY: N. Hamamura DATE: 8-15-84 — ENGR: [illegible signature] DATE: 8-15-84
CHKD: S. [illegible] DATE: 10-13-84 — APPR:

SIZE: B — DRAWING NUMBER: 250448 — REV: 10



REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
92
4PL
44
2PL
93
2PL
87
103
2PL
94
4PL
101
100
VR1
VR2
251854
DETAIL
J3 : SHORT
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON DECIMALS
DRAWN BY
DATE
11-24-84
CHKD:
ENGR
APPR.
USED ON
NEXT ASSY
MATERIAL
FINISH
commodore
PCB ASSY, 1541B
SIZE
B
250448
REV
10
SCALE NONE
SHEET 5 OF 5

PART NO.	DESCRIPTION
1540002-01	POWER SUPPLY ASSY VIC-1540 UL
-02	CSA
-03	JPN
-04	VDE
1540002-05	VIC-1540 BSI
-06	1541 UL
-07	CSA
-08	JPN
-09	VDE
1540002-10	POWER SUPPLY ASSY 1541 BSI

REV	DATE	CHANGE		
A	1/26/81	PRODUCTION RELEASE		
B		CHANGED FILTER POWER CONNECTOR FOR CSA (ITEM 24 WAS ITEM 23)	T.T	
C	8/24/82	CHANGED FILTER POWER CONNECTOR FOR FCC (ITEM 25 WAS ITEM 23)	T.T	
D	6/22/82	CHANGED ACCESSORY OF TRANSFORMER	T.T	
E	8/13/82	CHANGED SCREW TO H3-6 FROM H3-8. ADDED DASH 06 THRU 10 AND ITEM 21.	T.T	
F	12/7/82	ADDED ITEM 8, 9 AND 63. ADDED SHEET 5 OF 5.	T.T	
G	2/8/83	REVISED PER ECO 830060		
H	3/5/83	REVISED PER ECO 830101		
J	4/21/83	REVISED PER ECO 830196		
K	6/27/83	REVISED PER ECO 830298		
L	7/12/83	REVISED PER ECO 830327		
M	10-25-83	REVISED PER ECO 830429		

4. NO CHANGE QTY FOR ITEM 54 IF USED ITEM 6 OR 7.

3. USE ONLY WHEN USED ITEM 8 OR 9.

2. IF ITEM 8 OR 9 ARE USED THEN QTY FOR ITEM 54 WILL CHANGE FROM 7 TO 9 PCS AND USED WITH ITEM 63.

1. SHEET 4 & 5 OF 5 ARE B-SIZE ASSY DWG.

NOTES.

commodore	TITLE: POWER SUPPLY ASSY VIC-1540	DRAWN BY: Y. IMAGAWA	DATE 1/1/81	APPR:	DATE	SIZE B	1540002-	SHEET 1 OF 5
		CHKD: [illegible]	1/21/81					

QUANTITY REQD PER PART/DASH NO. 10	09	08	07	06	05	04	03	02	01	ITEM	D S	PART NUMBER	DESCRIPTION	REF. DES	BEND	NOTES
S	S	S	S	S	1	1	1	1	1	1	D	1540012	POWER CHASSIS			SUBSTITUTE FOR ITEM 2, SEE NOTE 2
1	1	1	1	1						2	D	251153	POWER CHASSIS			SEE NOTE 3
										3						
									1	4	B/D	1540001 -01	PCB ASSY (FCC) UL			
					1	1	1	1		5	B/D	1540001 -02	PCB ASSY			
				S						6	B/D	1540001 -03	PCB ASSY (FCC) UL			SUBSTITUTE FOR ITEM 8
S	S	S	S							7	B/D	1540001 -04	PCB ASSY			SUBSTITUTE FOR ITEM 9
				1						8	B	1540048-01	PCB ASSY (FCC) UL			USED LOGIC ARRAY
1	1	1	1							9	B	1540048-02	PCB ASSY			USED LOGIC ARRAY
										10						
										11						
S	S	S	S	S	S	S	S	S	S	12	B	325519 -01	FLOPPY DISK (BLACK)			SUBSTITUTE FOR ITEM 13
1	1	1	1	1	1	1	1	1	1	13	B	325519 -02	FLOPPY DISK (BROWN)			
		1	1	1			1	1	1	14	B	903614 -01	FUSE HOLDER FH 032			
										15						
1	1				1	1				16	B	903615 -01	FUSE HOLDER FH 033			
										17						
										18						
1	1	1	1	1	1	1	1	1	1	19	B	904509 -01	SWITCH ROCKER	SW1		
										20						
S	S	S		S	S	S	[illegible]		S	21	B	325552-01	FILTER POWER CONNECTOR			SUBSTITUTE FOR ITEM 23 (LOKIN)
S	S	S			S	S	S			22	B	903467 -01	FILTER POWER CONNECTOR			SUBSTITUTE FOR ITEM 23
1	1	1			1	1	1			23	B	903467 -02	FILTER POWER CONNECTOR			
		S	1				S	1		24	B	903350 -01	POWER CONNECTOR			SUBSTITUTE FOR ITEM 23 (HAWAI PA-126)
S	S	S		1	S	S	S		1	25	B	903467 -03	FILTER POWER CONNECTOR			
1	1				1	1				26	B	903559 -02	FUSE, SLO BLO 250V 0.5A			5.2ϕ x 20 mm
		S					S			27	B	903555 -20	FUSE, SLO BLO 250V 1.0A			6.3ϕ x 30 mm SUBSTITUTE FOR ITEM 28
		1	1	1			1	1	1	28	B	903556 -16	FUSE, NORMAL BLO 250V 1.0A			6.3ϕ x 30 mm
		1					1		1	29	C	1540009 -01	POWER TRANSFORMER JIS	T1		
		S	1	1			S	1	S	30	C	1540009 -02	POWER TRANSFORMER UL, CSA, JIS	T1		SUBSTITUTE FOR ITEM 29
1	1				1	1				31	C	1540009 -03	POWER TRANSFORMER VDE BSI 240/220V	T1		
										32						
4	4	4	4	4	4	4	4	4	4	33	B	325548-04	SCREW PAN HEAD WITH SPRING WASHER MS-10			TO BE ATTACHED WITH X-FORMER
										34						
										35						
										36						

commodore

TITLE: POWER SUPPLY ASSY VIC-1540

DRAWN BY: Y. IMAGAWA DATE: 7/1/81

CHKD: [illegible] DATE: 8/7/81

APPR:

DATE: / /

SIZE: B

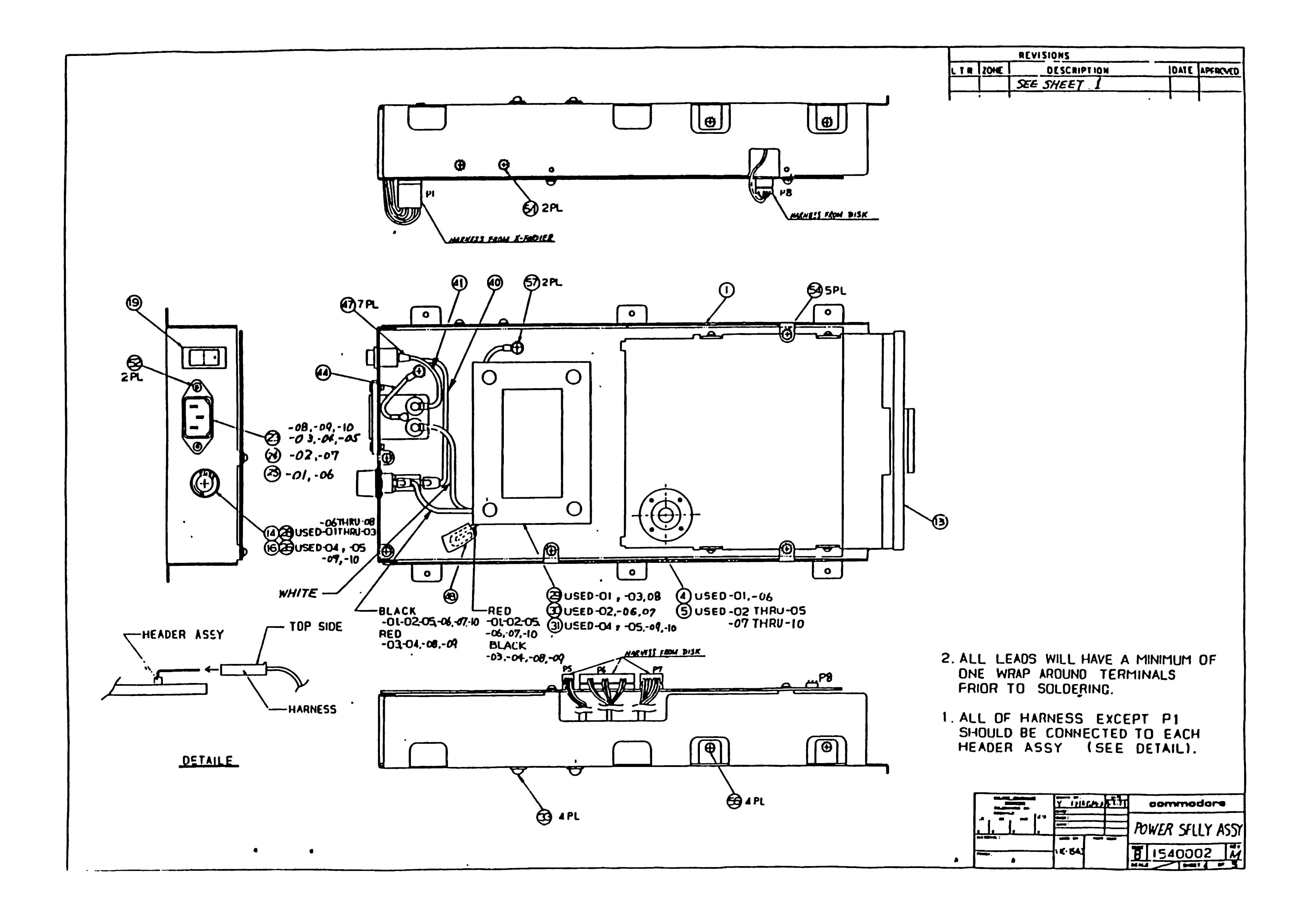
1540002-

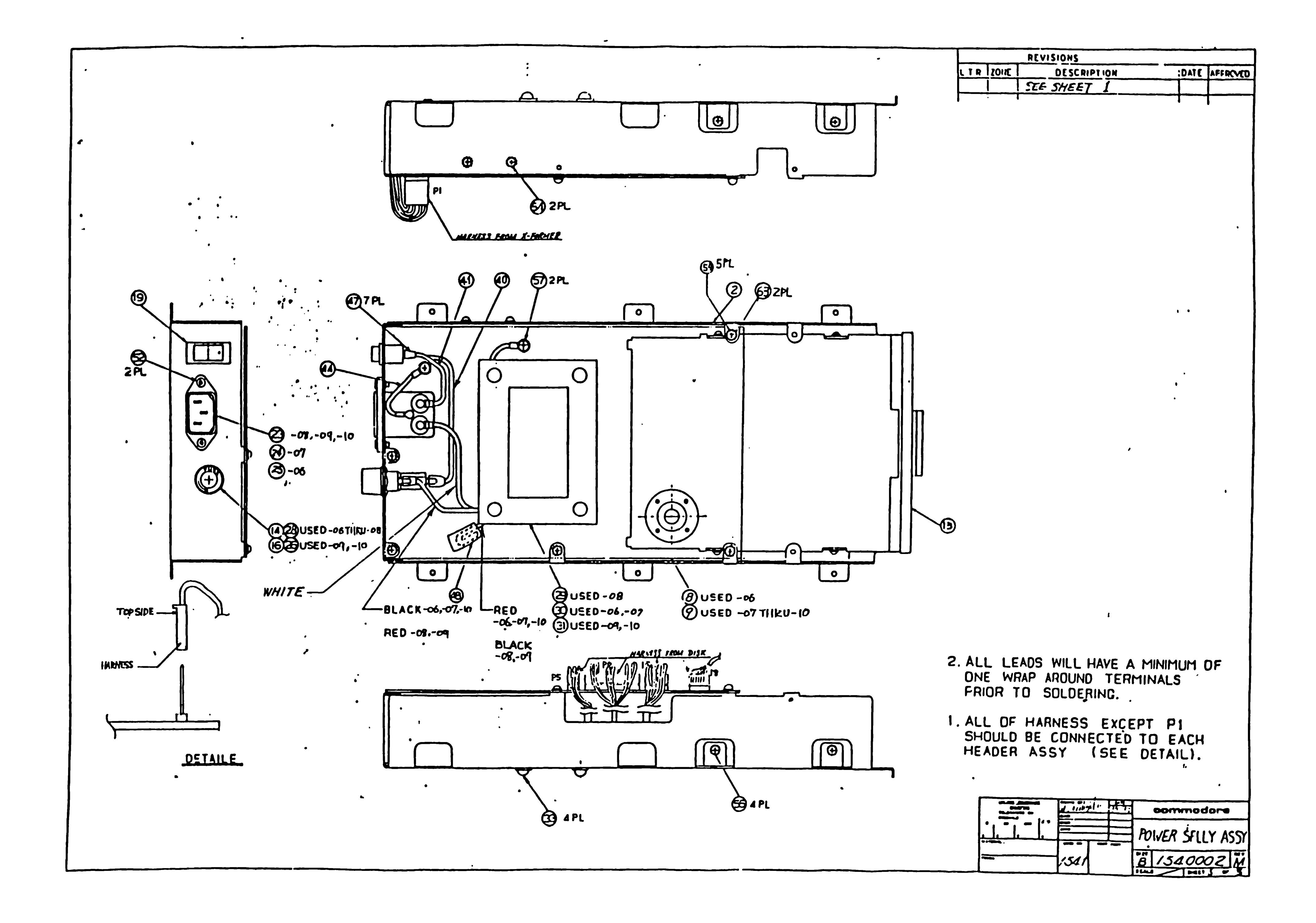
SHEET 2 of 5

10	09	08	07	06	-05	-04	-03	-02	-01	ITEM	D.S.	PART NUMBER	DESCRIPTION	REF. DES	BEND	NOTES
										37						
										38						
										39						
1	1	1	1	1	1	1	1	1	1	40	B	200017 -03	LEAD WIRE (BLACK)			1015 AWG-18 L150MM
1	1	1	1	1	1	1	1	1	1	41	B	200017 -11	LEAD WIRE (BLACK)			1015 AWG-18 L100MM
										42						
										43						
1	1	1	1	1	1	1	1	1	1	44	B	1540010	GROUND CABLE ASSY			
										45						
										46						
7	7	7	7	7	7	7	7	7	7	47	B	905476 -02	TUBING SHRINCABLE			ϕ5×20
1	1	1	1	1	1	1	1	1	1	48	B	905476 -04	TUBING SHRINCABLE			ϕ4×40
										49						
										50						
										51						
2	2	2	2	2	2	2	2	2	2	52	B	906803-02	SCREW FLAT HEAD M3X8			FILTER CONNECTOR (2)
										53						
7	7	7	7	7	7	7	7	7	7	54	B	325541-02	SCREW PAN HEAD M3X6 W/EXT	TOOTH WASHER		PCB (5), SEE NOTE 2
										55						
4	4	4	4	4	4	4	4	4	4	56	B	906610-03	SCREW PAN HEAD NO.6-32 UNC L10mm			FLOPPY DISK (4)
2	2	2	2	2	2	2	2	2	2	57	B	325542-02	SCREW PAN HEAD M4X6 W/EXT	TOOTH WASHER		GROUND (2)
										58						
										59						
										60						
										61						
										62						
2	2	2	2	2						63	B	1540051	METAL, L-ANGLE			SEE NOTE 2
										64						
										65						
										66						
										67						
										68						
										69						
										70						
										71						
										72						

commodore

TITLE:	DRAWN BY:	DATE	APPR:	DATE	SIZE		SHEET
POWER SUPPLY ASSY VIC-1540	Y. JIMAGAWA	7/1/81		7/1/81	B	1540002-	3 OF 5
	CHKD: [illegible]	5/21/81					


REVISIONS
LTR | ZONE | DESCRIPTION | DATE | APPROVED
SEE SHEET 1
P1
HARNESS FROM X-FORMER
2PL
P8
HARNESS FROM DISK
7PL
2PL
5PL
2PL
-08,-09,-10
-03,-04,-05
-02,-07
-01,-06
-06THRU-08
USED-01THRU-03
USED-04, -05
-09,-10
WHITE
BLACK
-01-02-05,-06,-07,-10
RED
-03-04,-08,-09
RED
-01-02-05
-06,-07,-10
BLACK
-03,-04,-08,-09
USED-01, -03,08
USED-02,-06,07
USED-04, -05,-09,-10
USED-01,-06
USED-02 THRU-05
-07 THRU-10
HARNESS FROM DISK
P5
P6
P7
P8
4PL
4PL
HEADER ASSY
TOP SIDE
HARNESS
DETAILE
2. ALL LEADS WILL HAVE A MINIMUM OF ONE WRAP AROUND TERMINALS FRIOR TO SOLDERING.
1. ALL OF HARNESS EXCEPT P1 SHOULD BE CONNECTED TO EACH HEADER ASSY (SEE DETAIL).
commodore
POWER SPLLY ASSY
B
1540002
M


REVISIONS
LTR ZONE DESCRIPTION DATE APPROVED
SEE SHEET 1
P1
2PL
HARNESS FROM X-FORMER
5PL
2PL
7PL
2PL
-08,-09,-10
-07
-06
USED-06 THRU-08
USED-09,-10
WHITE
BLACK-06,-07,-10
RED-08,-09
RED -06,-07,-10
BLACK -08,-09
USED-08
USED-06,-07
USED-09,-10
USED-06
USED -07 THRU-10
TOPSIDE
HARNESS
DETAIL E
HARNESS FROM DISK
PS
4PL
4PL
2. ALL LEADS WILL HAVE A MINIMUM OF ONE WRAP AROUND TERMINALS FRIOR TO SOLDERING.
1. ALL OF HARNESS EXCEPT P1 SHOULD BE CONNECTED TO EACH HEADER ASSY (SEE DETAIL).
commodore
POWER SPLY ASSY
1541
B 1540002 M

PART NO.	DESCRIPTION
1540001 -01	PCB ASSY VIC-1540 (FCC) UL
1540001 -02	PCB ASSY VIC-1540
1540001 -03	PCB ASSY VIC-1541 (FCC) UL
1540001 -04	PCB ASSY VIC-1541

LTR	DATE	REVISIONS	BY	APP
A	5/21/81	PRODUCTION RELEASE	T.T	[illegible]
B	[illegible]	ADDED SHEET 6 OF 7 (FOR FCC)	T.T	[illegible]
C	8/13/82	ADDED DASH -03 AND -04	T.T	[illegible]
D	11/20/82	ADDED ITEM 6.	T.T	[illegible]
E	3/3/83	REVISED PER ECO 830084	T.T	[illegible]
F	11/29/83	REVISED PER ECO 830479		[illegible]

[2] THIS ROM CAN BE USED ON ONLY USA · CANADA AND JAPAN'S VERSION FOR SUBSTITUTE FOR ITEM 35.

1. SHEET 6 TO 8 OF 8 B-SIZE ASSY DWG.

NOTES.

commodore	TITLE: PCB ASSY VIC-1540	DRAWN BY: Y. IMAGAWA	DATE 7/1/81	APPR:	DATE / /	SIZE B	1540001-	SHEET 1 OF 8
		CHKD: [illegible]	8/26/81		/ /			

PART NO.	DESCRIPTION
1540001 -01	PCB ASSY VIC-1540 (FCC) UL
1540001 -02	PCB ASSY VIC-1540
1540001 -03	PCB ASSY VIC-1541 (FCC) UL
1540001 -04	PCB ASSY VIC-1541

REV	DATE	DESCRIPTION		
A	5/21/81	PRODUCTION RELEASE	T.T	[illegible]
B	[illegible]	ADDED SHEET 6 OF 7 (FOR FCC)	T.T	[illegible]
C	8/13/82	ADDED DASH -03 AND -04	T.T	[illegible]
D	7/20/82	ADDED ITEM 6.	T.T	[illegible]
E	3/3/83	REVISED PER ECO 830084	T.T	[illegible]
F	11/29/83	REVISED PER ECO 830479		[illegible]

NOTES.

1. SHEET 6 TO 8 OF 8 B-SIZE ASSY DWG.

[2] THIS ROM CAN BE USED ON ONLY USA · CANADA AND JAPANS VERSION FOR SUBSTITUTE FOR ITEM 35.

commodore	TITLE: PCB ASSY VIC-1540	DRAWN BY: Y. IMAGAWA	DATE 7/1/81		DATE / /	SIZE B	1540001-	SHEET 1 OF 8
		CHKD: [illegible]	8/23/81	APPR:	/ /			

QTY 01	QTY 03	QTY 02	QTY 01	ITEM	D.S.	PART NUMBER	DESCRIPTION		REF. DES	BEND	NOTES
1	1	1	1	1	C	1540007	P.C. BOARD 315×155×1.6t				MTL: GLASS EPOXY G-10
				2							
				3							
	REF		REF	4	C	1540008-01	SCHEMATIC DIAGRAM				
REF		REF		5	C	1540008-02	SCHEMATIC DIAGRAM				
1	1			6	B	901229-03	IC 2364-197	ROM	UAB5		$E000 ~ $FFF
1	1	1	1	7	B	901435-01	IC MPS 6502	CPU	UCD5		
1	1	1	1	8		325302-01	2364-130	ROM	UAB4		$C000 ~ $DFFF
		1	1	9		325303-01	2364-131	ROM	UAB5		$E000 ~ $FFFF
2	2	2	2	10		901437-01	MPS 6522	VIA	UAB1, UCD4		
4	4	4	4	11		901471-01	MPS 2114	RAM	UA2,3, UB2,3		
2	2	2	2	12		901521-01	74LS00	2-NAND	UB7, UF5		
1	1	1	1	13		901521-21	74LS02	2-NOR	UE5		
1	1	1	1	14		901521-02	74LS04	INV.	UB6		
1	1	1	1	15		901521-24	74LS10	3-NAND	UF3		
1	1	1	1	16		901521-30	74LS14	SCH. INV.	UC1		
1	1	1	1	17		901521-17	74LS42	DEC.	UB8		
2	2	2	2	18		901521-06	74LS74	D-FF	UE4, UF6		
1	1	1	1	19		901521-32	74LS86	2-Ex-OR	UG2		
1	1	1	1	20		901521-15	74LS133	13-NAND	UC2		
1	1	1	1	21		901521-18	74LS139	Dem. P	UE2		
1	1	1	1	22		901521-28	74LS164	8 Bit Shift Reg	UD2		
1	1	1	1	23		901521-12	74LS165	8 Bit Shift Reg	UD3		
1	1	1	1	24		901521-40	74LS191	4 Bit Count.	UE3		
2	2	2	2	25		901521-26	74LS193	4 Bit Count.	UE7, UF4		
1	1	1	1	26		901521-45	74LS245	Bus Tranceiver	UC3		
1	1	1	1	27		901522-32	7402		UC7		
2	2	2	2	28		901522-06	7406	INV. OC.	UD1, UF2		
1	1	1	1	29		901522-03	74177		UC6		
1	1	1	1	30		901510-01	9602		UG3		
1	1	1	1	31		901523-04	LM311		UH4		
2	2	2	2	32	B	901523-08	NE592		UH5, UH7		
1	1	1	1	33	B	901522-01	7417		UG4		
S	S	S	S	34	B	901521-54	74LS197		UC6		SUBSTITUTION FOR ITEM 29
S	S			35	B	901229-02	2364-186	ROM	UAB5		$E000 ~ $FFFF SUB. FOR ITEM 6.
S	S			36	B	901229-01	IC 2364-173	ROM	UAB5		$E000 ~ $FFFF SUB. FOR ITEM 6. [7]

commodore

TITLE: PCB ASSY VIC-1540

DRAWN BY: | DATE: / /
CHKD: C. Takase | 8/21/81
APPR:
DATE: / / | SIZE: B | 1540001- | SHEET 2 of 8

QUANTITY REQD PER PART/DASH NO. -04	-03	-02	-01	ITEM	D.S.	PART NUMBER	DESCRIPTION	REF. DES	BEND	NOTES
2	2	2	2	37	B	902671	TRANSISTOR NPN 2SC945	Q2, Q3		
S	S	S	S	38		902693-01	NPN 2SC1815	Q2, Q3		SUBSTITUTION FOR ITEM 37
4	4	4	4	39		902679	NPN 2SD467	Q4-Q7		
S	S	S	S	40		902682	NPN 2SC2120	Q4-Q7		SUSTITUTION FOR ITEM 39
1	1	1	1	41		902720	PNP 2SA673	Q1		
4	4	4	4	42		902717	PNP 2SA733	Q8-Q11		
S	S	S	S	43	B	902744-01	TRANSISTOR PNP 2SA1015	Q8-Q11		SUBSTITUTION FOR ITEM 42
S	S	S	S	44	B	901522-30	IC 7407	UG4		SUBSTITUTION FOR ITEM 33
				45						
6	6	6	6	46	B	900750-02	DIODE, SIGNAL 1N4002	CR2,4,13-16		
8	8	8	8	47		900850-05	SIGNAL WG713C	CR6-11,17,18		
S	S	S	S	48		900850-01	SIGNAL 1N4148	CR6-11,17,18		SUBSTITUTION FOR ITEM 47
1	1	1	1	49		325505-01	ZENER 3.3V 500mW ±5%	CR5		HZ3C-2
S	S	S	S	50		325505-02	3.3V 500mW ±5%	CR5		HZ4A-1 SUB. FOR ITEM 49
S	S	S	S	51		900948-06	3.3V 500mW ±5%	CR5		1N5226B SUB. FOR ITEM 49
1	1	1	1	52		325506-01	5.1V 500mW ±5%	CR12		HZ5C-2
S	S	S	S	53		900948-11	ZENER 5.1V 500mW ±5%	CR12		1N5231 SUB. FOR ITEM 52
1	1	1	1	54		900756-01	BRIDGE 1.5A 50V	CR1		KBP-005
1	1	1	1	55	B	900755-02	DIODE, BRIDGE 4A 50V	CR3		KBL-02
				56						
1	1	1	1	57	B	900556-02	CRYSTAL 16MHz	Y1		
				58						
1	1	1	1	59	B	325513-01	COIL, INDUCTOR 2.2μH	L1		
2	2	2	2	60	B	325513-02	COIL, INDUCTOR 22μH	L8, L11		
3	3	3	3	61	B	325513-03	COIL, INDUCTOR 100μH	L7, L9, L10		
				62						
1	1	1	1	63	B	901528-04	VOLTAGE REGULATOR 12V 1.5A	VR1		LM340-12
1	1	1	1	64	B	901528-01	VOLTAGE REGULATOR 5V 3A	VR2		LM323
2	2	2	2	65	B	904914	INSULATION MYLAR TO-3			ATTACHED WITH VOLT REGULATOR
S	S	S	S	66	B	325551-01	INSULATION SILICONE TO-3			SUBSTITUTION FOR ITEM 65.
				67						
2	2	2	2	68	B	903361	CONNECTOR, DIN 6 PIN	P3, P4		HOSHIDENKI TCS4460-01-101
				69						
3	3	3	3	70	B	904150-06	SOCKET IC LOW PRO. 40 PIN			
2	2	2	2	71	B	904153-03	SOCKET IC LOW PRO. 24 PIN			
				72						

commodore	TITLE: PCB ASSY VIC-1540	DRAWN BY:	DATE / /	APPR:	DATE / /	SIZE B	1540001-	SHEET 3 OF 8
		CHKD: J. [illegible]	8/21/81		/ /			

QUANTITY REQD PER PART/DASH NO. -04	-03	-02	-01	ITEM	D.S.	PART NUMBER	DESCRIPTION	REF. DES	BEND	NOTES
1	1	1	1	73	B	325514-04	HEADER ASSY 2.5 PICH R-ANG. 4PIN	P2		MOLEX 5049-04AG
1	1	1	1	74		325515-06	6PIN	P7		3094-06A
1	1	1	1	75		325515-15	15PIN	P6		3094-15A
2	2	2	2	76	B	325515-03	2.5 PICH R-ANG. 3PIN	P5, P8		3094-03A
1	1	1	1	77	B	903316-04	HEADER ASSY 3.96 PICH 4PIN	P1		MOLEX 5271-04A
				78						
	1		1	79	B	900100-03	CAP. ELECTROLYTIC 220μF/25V	C65		
1	1	1	1	80	B	900101-44	CAP. ELECTROLYTIC 10000μF/16V	C52		AXIAL LEAD φ22×52
1	1	1	1	81		900101-45	6800μF/25V	C51		AXIAL LEAD φ22×52
2	2	2	2	82		900100-33	47μF/16V	C2, C5		
2	2	2	2	83		900100-32	ELECTROLYTIC 1μF/25V	C1, C4		
1	1	1	1	84		900402-15	TANTALIUM 10μF/25V	C12		
1	1	1	1	85		900402-11	TANTALIUM 3.3μF/25V	C23		
1	1	1	1	86		900010-51	CERAMIC 68PF/50V	C10		
1	1	1	1	87		251070-16	33PF/50V	C33		
2	2	2	2	88		900010-53	330PF/50V	C28, C49		± 5%
3	3	3	3	89		900010-54	680PF/50V	C16, C27, C50		± 5%
1	1	1	1	90		900010-25	1000PF/50V	C26		
40	40	40	40	91		900010-20	0.1μF/50V	C3,6-9,11,13,14,17-22,25,29-32,34-48,51-55,57,60,61		
2	2	2	2	92		900010-14	CERAMIC 0.022μF/50V	C58, C59		
1	1	1	1	93		900100-40	ELECTROLYTIC 100μF/16V	C56		
2	2	2	2	94	B	900402-17	CAP. TANTALIUM 0.47μF/16V	C15, C24		± 20%
	1		1	95	B	900402-08	CAP. TANTALIUM 4.7μF/25V	C62		
	1		1	96	B	900402-14	CAP. TANTALIUM 1μF/10V	C63		
	1		1	97	B	900465-02	CAP. CERAMIC 0.033μF/25V	C64		
2	2	2	2	98	B	901550-108	RESISTOR, CARBON 1/4W 5% 360Ω	R25, R30		
1	1	1	1	99	B	901550-56	RESISTOR, CARBON 1/4W 5% 47Ω	R3		
5	5	5	5	100	B	901550-89	RESISTOR, CARBON 1/4W 5% 150Ω	R18,19,35,36		
4	4	4	4	101		901550-52	220Ω	R4,16,17,45,59		
5	5	5	5	102		901550-14	330Ω	R1,2,5,20,37		
6	6	6	6	103		901550-58	470Ω	R27,28,49,50,55,57		
1	1	1	1	104		901550-38	510Ω	R24		
5	5	5	5	105		901550-31	680Ω	R9, R39-R42		
8	8	8	8	106		901550-01	1 KΩ	R6,11,31-34,44,58		
4	4	4	4	107		901550-53	2 KΩ	R21-R23, R38		
5	5	5	5	108	B	901550-18	RESISTOR, CARBON 1/4W 5% 2.2KΩ	R10,15,51,52,56		

commodore

TITLE: PCB ASSY VIC-1540

DRAWN BY: DATE / /

CHKD: A. Takeuchi DATE 1-1-81

APPR: DATE / /

SIZE B

154000l-

SHEET 4 of 8

-04	-03	-02	-01	ITEM	D. S.	PART NUMBER	DESCRIPTION	REF. DES	BENO	NOTES
1	1	1	1	109	B	901550-69	RESISTOR, CARBON 1/4W 5% 1.5KΩ	R48		
4	4	4	4	110	B	901550-12	22KΩ	R7,10,29,53		
1	1	1	1	111	B	901550-07	100KΩ	R46		
1	1	1	1	112	B	901550-03	RESISTOR, CARBON 1/4W 5% 5.1KΩ	R26		
1	1	1	1	113	B	901751-43	RESISTOR, METAL OXIDE 1/4W 1% 91Ω	R8		
1	1	1	1	114	B	901751-18	RESISTOR, METAL OXIDE 1/4W 1% 100Ω	R49		
1	1	1	1	115	B	901751-44	RESISTOR, METAL OXIDE 1/4W 1% 150Ω	R54		
2	2	2	2	116	B	901751-45	RESISTOR, METAL OXIDE 1/4W 1% 9.1 KΩ	R12, R13		
1	1	1	1	117	B	901550-04	RESISTOR, CARBON 1/4W 5% 6.8KΩ	R43		
				118						
				119						
				120						
10	10	10	10	121	B	903025-01	FERRITE BEAD	L2-L6, L12-L16		
				122						
				123						
	2		2	124	B	4022048	SHIELD BOX			
	2		2	125	B	4022047	SHIELD CAP			
2	2	2	2	126	B	1540023	HEAT SINK TO-3			
1	1	1	1	127	B	1540011	HEAT SINK REGULATOR			
A/R	A/R	A/R	A/R	128		904907-01	COMPOUND THER FOR HEAT SINK			CONJUNCTION WITH ITEM 65
				129						
				130						
				131						
4	4	4	4	132	B	906800-02	SCREW PAN HEAD M3x10			
4	4	4	4	134	B	905655-03	EXTERNAL TOOTH WASHER M3			
4	4	4	4	135	B	905960-03	NUT HEX. M3			
				136						
4	4	4	4	137	B	905477-02	TUBE VINYL φ3.5 x L 5mm			
				138						
1	1	1	1	139	B	251584-04	WRAPPING WIRE AWG 28 L=40mm			
1	1	1	1	140	B	-05	L=47mm			
1	1	1	1	141	B	-06	L=50mm			
2	2	2	2	142	B	251584-07	WRAPPING WIRE AWG 28 L=60mm			
				143						
				144						
				145						

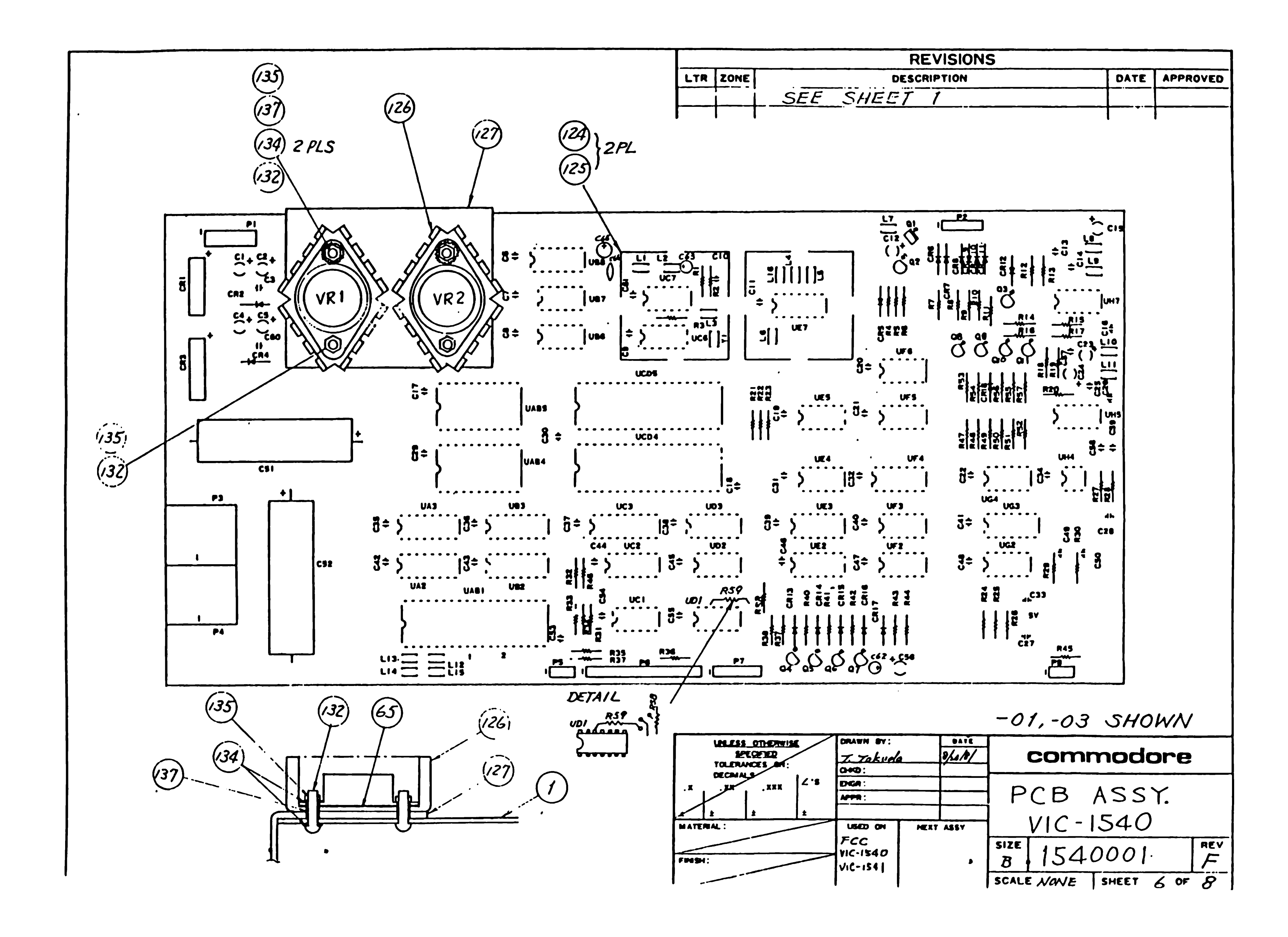
commodore

TITLE: PCB ASSY VIC-1540

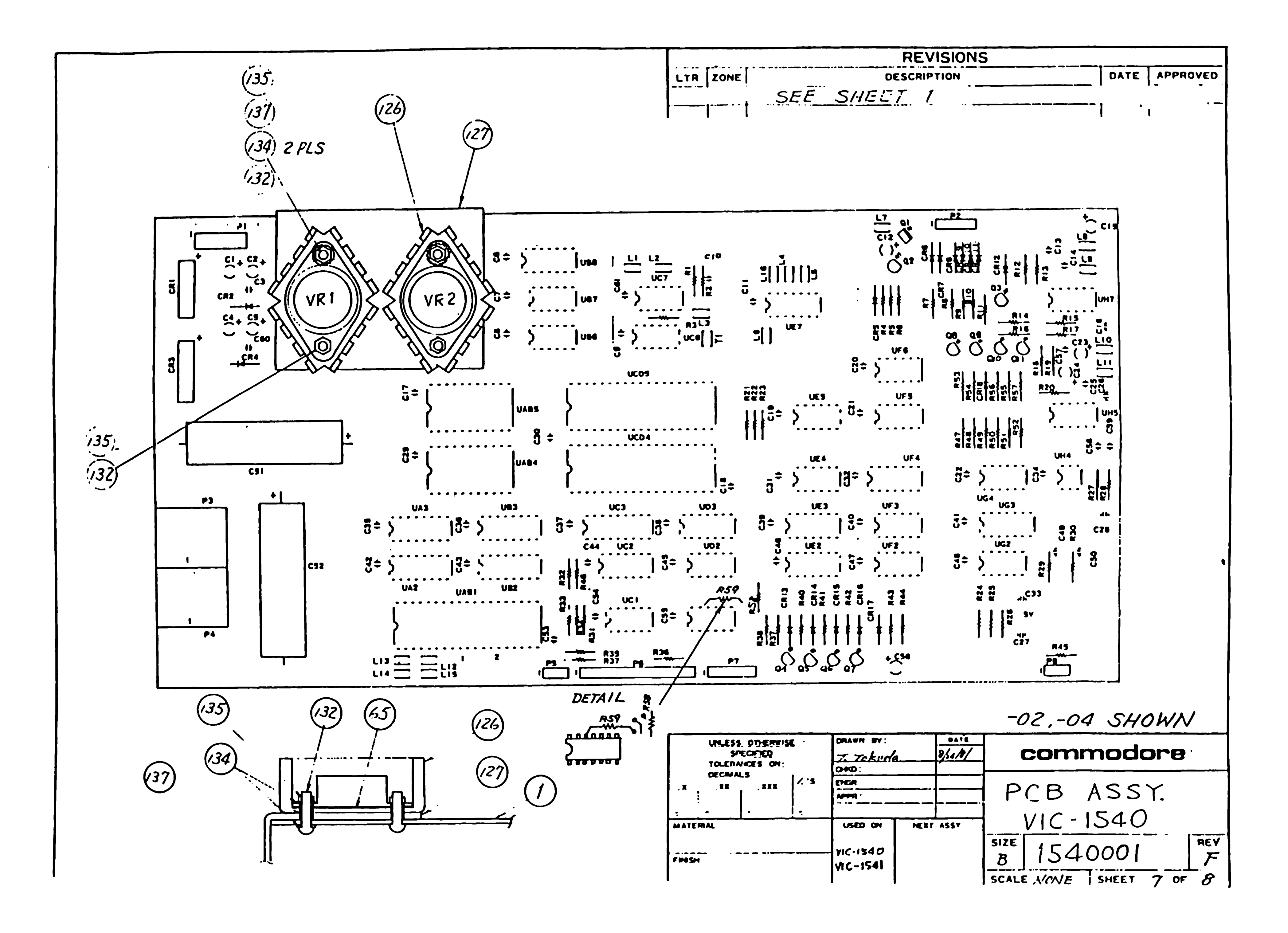
DRAWN BY: | DATE: / /

CHKD: C. Takasu | DATE: 8/31/81 | APPR: | DATE: / /

SIZE: B | 1540001- | SHEET 5 OF 8



REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
2 PLS
2PL
VR1
VR2
DETAIL
-01, -03 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
MATERIAL:
FINISH:
DRAWN BY:
T. Takuda
CHKD:
ENGR:
APPR:
DATE
USED ON
NEXT ASSY
FCC
VIC-1540
VIC-1541
commodore
PCB ASSY.
VIC-1540
SIZE
B
1540001
REV
F
SCALE NONE
SHEET 6 OF 8



REVISIONS
LTR ZONE DESCRIPTION DATE APPROVED
SEE SHEET 1
135
137
134 2 PLS
132
126
127
VR1
VR2
DETAIL
R59
65
1
-02,-04 SHOWN
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: DECIMALS
.X .XX .XXX
MATERIAL
FINISH
DRAWN BY: T. Tokuda
DATE
CHKD
ENGR
APPR
USED ON
NEXT ASSY
VIC-1540
VIC-1541
commodore
PCB ASSY.
VIC-1540
SIZE B
1540001
REV F
SCALE NONE
SHEET 7 OF 8

PART NO.	DESCRIPTION
1540048-01	PCB ASSY. VIC-1541. FCC (UL) USED LOGIC ARRAY.
1540048-02	PCB ASSY. VIC-1541. USED LOGIC ARRAY.

DWG NO. 1540048

TITLE: PCB ASSY. VIC-1541.

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE	12/13/82	T. MATSUMOTO
B		REVISED PER ECO 830085	2/25/83	[illegible]
C		REVISED PER ECO 830125	3/25/83	[illegible]
D		REVISED PER ECO 830257	6/21/83	[illegible]
E		REVISED PER ECO 830368	8/1/83	[illegible]
F		REVISED PER ECO 830379	8-9-83	[illegible]
G		REVISED PER ECO 830410	9-27-83	[illegible]
H		REVISED PER ECO 830423	10-13-83	[illegible]
J		REVISED PER ECO 830531	12-27-83	[illegible]

NOTES-UNLESS OTHERWISE SPECIFIED:

1. SHEET 7 TO 10 OF 10 SIZE B
   ASSY DWG

commodore	DRAWN BY T. Takubo	DATE 11/16/82	ENGR [illegible]	12/17/82	SIZE B	SHEET 1 OF 10
	CHKD		APPR: T. MATSUMOTO	12/18/82		

02	01	ITEM	DS	PART NUMBER	DESCRIPTION			REF DES	BEND	NOTES
/	/	1	B	1540050	P C BOARD 238 x155 x1.6t					GLASS EPOXY. G-10
		2								
		3								
		4								
	Ref	5	C	1540049-01	SCHEMATIC DIAGRAM					USED LOGIC ARRAY. FCC (UL)
Ref		6	C	1540049-02	SCHEMATIC DIAGRAM					USED LOGIC ARRAY.
		7								
		8								
		9								
		10								
		11								
/	/	12	B	901435-01	IC	MPS 6502	CPU	UC4		
2	2	13		901437-01		MPS 6522	VIA	UC2, UC3		
/	/	14		901229-03		2364-197	ROM	UB4		$E000 ~ $FFFF
/	/	15		325302-01		2364-130	ROM	UB3		$C000 ~ $DFFF
/	/	16		325572-01		LOGIC ARRAY	40 PIN DIP	UC1		
/	/	17		901521-01		74LS00	2-NAND	UC6		
/	/	18		901521-17		74LS42	DEC.	UC7		
/	/	19		901522-01		7417	BUFFER	UD2		
/	/	20		901521-32		74LS86	2-EX-OR	UD3		
2	2	21		901522-06		7406	INV. BUF.	UB1, UD1		
/	/	22		901521-02		74LS04	INV.	UC5		
/	/	23		901521-30		74LS14	SCH. INV.	UA1		
/	/	24		901521-26		74LS193	4 BIT. COU.	UE6		
/	/	25		901521-54		74LS197		UD5		
S	S	26		901522-03		74177		UD5		SUBSTITUTE FOR ITEM 25.
/	/	27		901510-01		9602		UD4		
/	/	28		901523-04		LM311		UE4		
2	2	29	B	901523-08	IC	NE592		UF3, UF4		
1	1	30	B	325502-03	IC	TMM2016P	RAM	UB2		
S	S	31	B	325502-01	IC	M58725P	RAM	UB2		SUBSTITUTE FOR ITEM 30.
S	S	32	B	901522-30	IC	7407		UD2		SUBSTITUTE FOR ITEM 19.
S	S	33	B	901521-30	IC	74LS14	SCH. INV.	UC5		SUBSTITUTE FOR ITEM 22
S	S	34	B	901522-05	IC	7404	INV.	UC5		
S	S	35	B	901522-19	IC	7414	SCH. INV.	UC5		SUBSTITUTE FOR ITEM 22
		36								
		37								

commodore

TITLE:	DRWN BY:	DATE	ENGR:	DATE	SIZE		REV	SHT
PCB ASSY. VIC-1541	T. Takuda	11/16/82	[illegible]	12/7	B	1540048	J	2/10
	CHKD:		APPR: T.M	12/17				

02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
2	2	38	B	902671	TRANSISTOR NPN 2SC945	Q2,Q7		
S	S	39		902693-01	2SC1815	Q2,Q7		SUBSTITUTE FOR ITEM 38.
4	4	40		902679	2SD467	Q8-Q11		
S	S	41		902682-01	NPN 2SC2120	Q8-Q11		SUBSTITUTE FOR ITEM 40.
1	1	42		902720	PNP 2SA673	Q1		
4	4	43		902717	2SA733	Q3-Q6		
S	S	44		902744-01	PNP 2SA1015	Q3-Q6		SUBSTITUTE FOR ITEM 43.
S	S	45	B	902682-02	TRANSISTOR NPN 2SC2060	Q8-Q11		SUBSTITUTE FOR ITEM 40.
		46						
		47						
		48						
		49						
S	S	50	B	325505-03	DIODE, ZENER 3.3V 500mW ±5%	CR5		SUBSTITUTE FOR ITEM 55.
S	S	51		325506-02	, ZENER 5.1V 500mW ±5%	CR13		SUBSTITUTE FOR ITEM 58.
6	6	52		900750-02	RECTIFIER 1N4002	CR2,4,8-11		
8	8	53		900850-05	SIGNAL WG713C	CR6,7,12,14-18		
S	S	54		900850-01	SIGNAL 1N4148	CR6,7,12,14-18		SUBSTITUTE FOR ITEM 53.
1	1	55		325505-01	, ZENER 3.3V 500mW ±5%	CR5		HZ3C-2
S	S	56		325505-02	3.5V 500mW ±5%	CR5		HZ4A-1 SUB. FOR ITEM 55.
S	S	57		900948-06	3.3V 500mW ±5%	CR5		1N5226B SUB. FOR ITEM 55.
1	1	58		325506-01	5.1V 500mW ±5%	CR13		HZ5C-2
S	S	59		900948-11	, ZENER 5.1V 500mW ±5%	CR13		1N5231 SUB. FOR ITEM 58.
2	2	60		900756-01	, BRIDGE 1.5A 50V	CR1,CR3		KBP-005
S	S	61		900850-19	DIODE SIGNAL MA162	CR6,7,12,14-18		SUBSTITUTE FOR ITEM 53.
S	S	62		325566-06	CRYSTAL MODULE 16MHZ 100ppm	Y1		SUBSTITUTE FOR ITEM 64 (KYOCERA)
S	S	63		-07	100ppm	Y1		SUBSTITUTE FOR ITEM 64 (MYDCOM)
1	1	64		-01	50ppm	Y1		
S	S	65	B	325566-02	CRYSTAL MODULE 16 MHz 100ppm	Y1		SUBSTITUTE FOR ITEM 64.
		66						
S	S	67	B	251188-01	COIL, INDUCTOR 2.2µH	L1		SUBSTITUTE FOR ITEM 69
S	S	68		251472-01	2.2µH	L1		SUBSTITUTE FOR ITEM 69
1	1	69		325513-01	2.2µH	L1		
2	2	70		325513-02	22µH	L9,L10		
3	3	71		325513-03	100µH	L8,L11,L12		
S	S	72		251188-02	22µH	L9,L10		SUBSTITUTE FOR ITEM 70
S	S	73		251472-02	22µH	L9,L10		SUBSTITUTE FOR ITEM 70
S	S	74	B	251188-03	COIL, INDUCTOR 100µH	L8,L11,L12		SUBSTITUTE FOR ITEM 71

commodore	TITLE: PCB ASSY. VIC-1541	DRWN BY: T. Takeda DATE 11/16/83 CHKD:	ENGR: HG DATE 12/17 APPR: T.M 12/17	SIZE B	1540048	REV J	SHT 3/10

02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
/	/	75	B	901528-04	VOLTAGE REGULATOR 12V, 1.5A	VR1		LM340-12 TO-3
/	/	76	B	-03	VOLTAGE REGULATOR 5V, 1.2A	VR2		LM340-5 TO-3
S	S	77	B	901528-05	VOLTAGE REGULATOR 5V, 1A	VR2		SUBSTITUTE FOR ITEM 76
		78						
2	2	79	B	904914	INSULATION MYLAR TO-3			
S	S	80	B	325551-01	INSULATION SILICONE TO-3			SUBSTITUTE FOR ITEM 79.
		81						
		82						
2	2	83	B	903361	CONNECTOR, DIN 6P	P2, P3		
		84						
		85						
		86						
4	4	87	B	904150-06	SOCKET IC LOW PRO 40 PIN			
3	3	88	B	904150-04	SOCKET IC LOW PRO 24 PIN			
		89						
		90						
		91						
		92						
		93						
		94						
		95						
/	/	96	B	251065-04	HEADER ASSY. 2.5 PITCH 4 PIN	P8		MOLEX 5048-04AG
/	/	97		325562-06	6 PIN	P7		3022-06A
/	/	98		325562-15	15 PIN	P6		3022-15A
2	2	99		325562-03	2.5 PITCH 3 PIN	P4, P5		3022-03A
/	/	100	B	903316-04	HEADER ASSY. 3.96 PITCH 4 PIN	P1		MOLEX 5271-04A
		101						
		102						
		103						
		104						
		105						
		106						
		107						
		108						
		109						
		110						
		111						

commodore | TITLE: PCB ASSY. VIC-1541 | DRWN BY: T. Tohuda | DATE 10/1/82 | CHKD: | ENGR: [illegible] | DATE 1-7-? | APPR: T.H | DATE 1-?-? | SIZE B | 1540048 | REV J | SHT 4/10

QUANTITY REQD PER PART/DASH NO. 02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
	1	112	B	900301-04	CAPACITOR ELECTROLYTIC 220µF/10V	C13		
1	1	113		900101-45	6800µF/25V	C17		
1	1	114		900101-32	4700µF/16V	C16		
2	2	115		900100-33	47µF/16V	C2, C5		
2	2	116		900100-32	ELECTROLYTIC 1µF/25V	C1, C4		
1	1	117		900402-15	TANTALIUM 10µF/25V	C15		
1	1	118		900402-11	TANTALIUM 3.3µF/25V	C44		
1	1	119		251070-16	CERAMIC 33pF/50V	C31		±5%
2	2	120		9000010-33	330pF/50V	C32, C36		±5%
3	3	121		-34	680pF/50V	C45, C33, C34		±5%
1	1	122		-25	1000pF/50V	C41		
24	24	123		-20	0.1µF/50V	C3, 6-10		14, 18, 19, 20, 22-30, 35, 40, 43, 47, 48
2	2	124		900010-14	CERAMIC 0.022µF/50V	C39, C42		
1	1	125		900100-40	ELECTROLYTIC 100µF/16V	C46		
2	2	126		900402-17	TANTALIUM 0.47µF/16V	C37, C38		
	1	127		-08	4.7µF/25V	C21		
	1	128		900402-14	TANTALIUM 1µF/35V	C11		
	1	129	B	900465-02	CAPACITOR CERAMIC 0.033µF/25V	C12		
		130						
		131						
		132						
1	1	133	B	901550-04	RESISTOR CARBON 1/4W ±5% 6.8KΩ	R25		
1	1	134		-36	47Ω	R1		
2	2	135		-108	360Ω	R14, R24		
4	4	136		-89	150Ω	R17, 18, 45, 46		
5	5	137		-52	220Ω	R4, 16, 36, 55,	57	
2	2	138		-14	330Ω	R3, R23		
6	6	139		-58	470Ω	R20, 22, 30, 37, 38	41	
1	1	140		-38	510Ω	R27		
6	6	141		-31	680Ω	R31, 42, 47-50		
6	6	142		-01	1KΩ	R2, 5, 6, 7, 8, 43		
4	4	143		-53	2KΩ	R9, 10, 26, 58		
5	5	144		-18	2.2KΩ	R19, 21, 32-34		
1	1	145		-69	1.5KΩ	R40		
4	4	146		-12	22KΩ	R12, 35, 39, 52		
1	1	147		-07	100KΩ	R44		
1	1	148	B	901550-03	RESISTER CARBON 1/4W ±5% 5.1KΩ	R11		

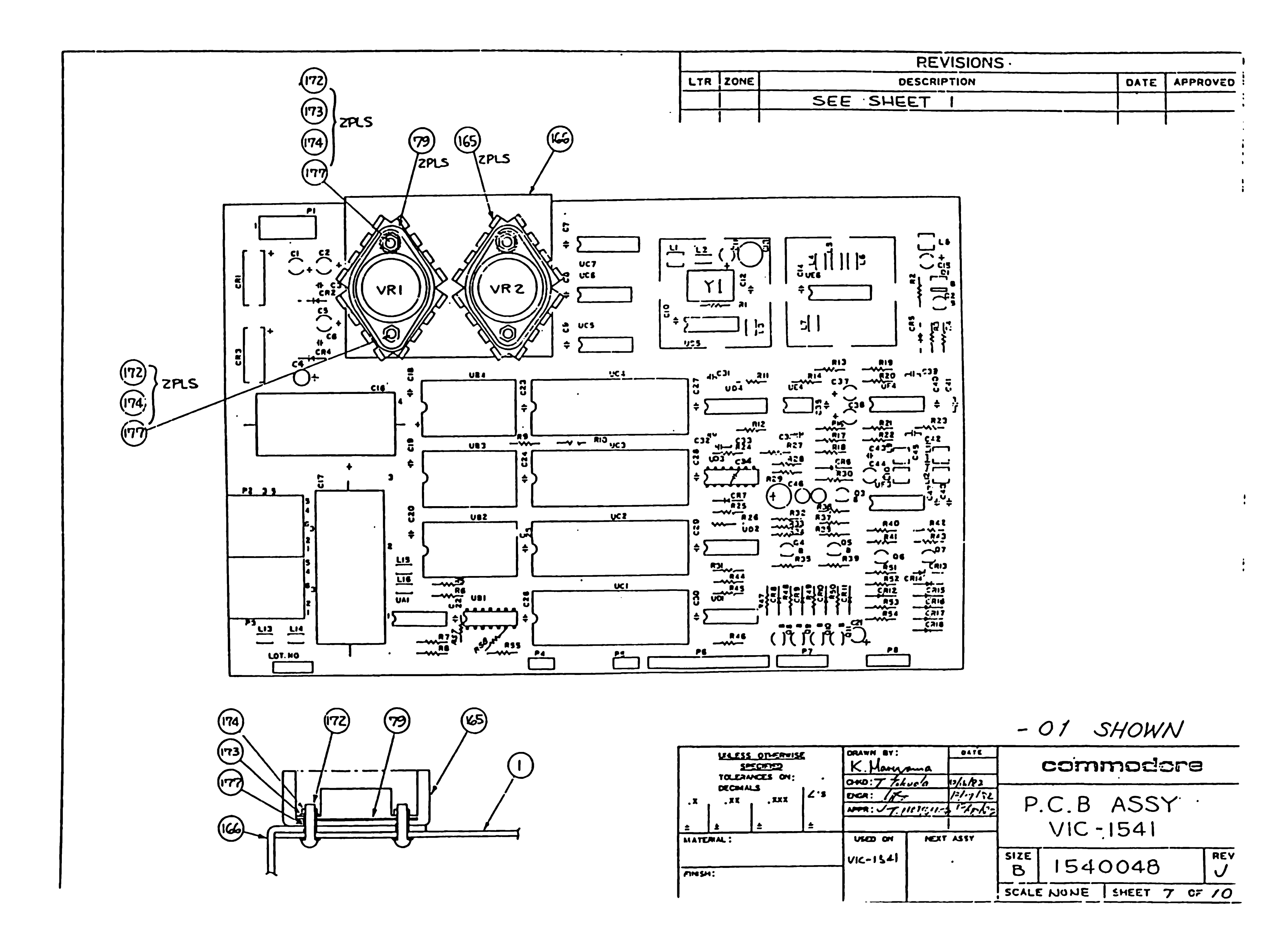
commodore

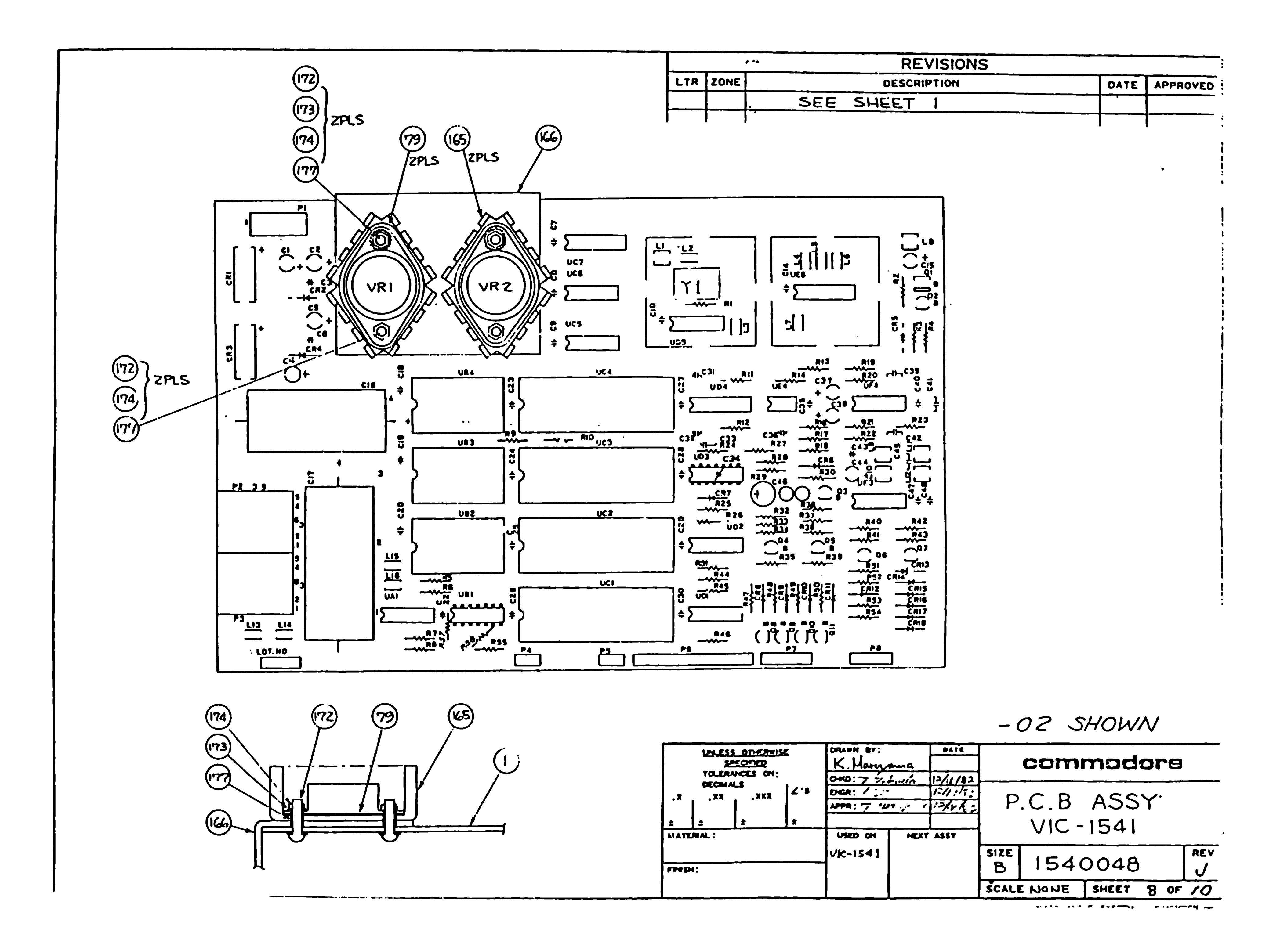
TITLE: PCB ASSY. VIC-1541

DRAWN BY: T. Takuda DATE 11/16/82 CHKD: ENGR: [illegible] DATE [illegible] APPR: T. M. [illegible] SIZE B 1540048 REV J SHT 5/10

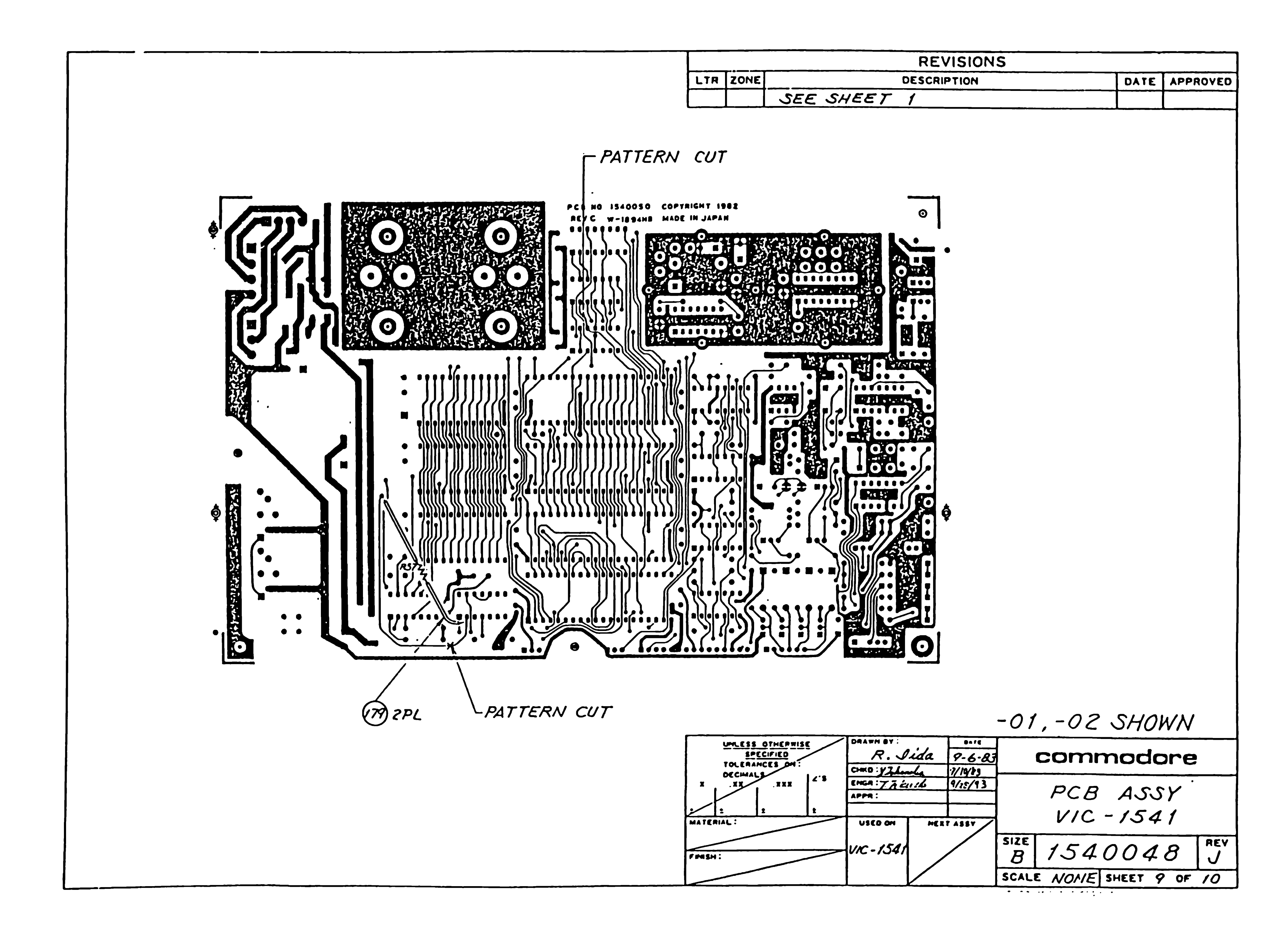
QUANTITY REQD PER PART/ DASH NO. 02	01	ITEM	OS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
1	1	149	B	901751-43	RESISTOR METAL OXIDE 1/4W ±1% 91Ω	R51		
1	1	150		-18	100Ω	R28		
1	1	151		-44	150Ω	R29		
2	2	152	B	901751-45	RESISTOR METAL OXIDE 1/4W ±1% 9.1kΩ	R53.R54		
		153						
		154						
		155						
		156						
		157						
10	10	158	B	325563-01	FERRITE BEAD	L2-7,13-16		
S	S	159	B	903025-01	FERRITE BEAD	L2-7,13-16		SUBSTITUTE FOR ITEM 158.
		160						
		161						
		162						
	2	163	B	4022048	SHIELD BOX			
	2	164	B	4022047	SHIELD CAP			
2	2	165	B	1540023	HEAT SINK TO-3			
1	1	166	B	1540011	HEAT SINK REGULATOR			
NR	NR	167		904907-01	COMPOUND THER FOR HEAT SINK			
		168						
		169						
		170						
		171						
4	4	172	B	325541-05	SCREW PAN HEAD/EXT TOOTH WASHER M3-12			
2	2	173	B	905655-03	EXTERNAL TOOTH WASHER M3			
4	4	174	B	905960-03	NUT HEX. M3			
		175						
4	4	176	B	905477-04	TUBING, INSULATION 3.0DIA × 7MM			USE WITH ITEM 76
S	S	177	B	905477-02	TUBING, INSULATION 3.5 DI[illegible] [illegible]M			SUBSTITUTE FOR ITEM 176. USE WITH ITEM 77
		178						
2	2	179	B	905477-05	TUBING, INSULATION 0.8DIA × 25MM			
		180						
2	2	181	B	251584-01	WRAPPING WIRE AWG28 L=30MM			
1	1	182		-02	L=104MM			
1	1	183	B	251584-03	WRAPPING WIRE AWG28 L=119MM			
		184						
		185						

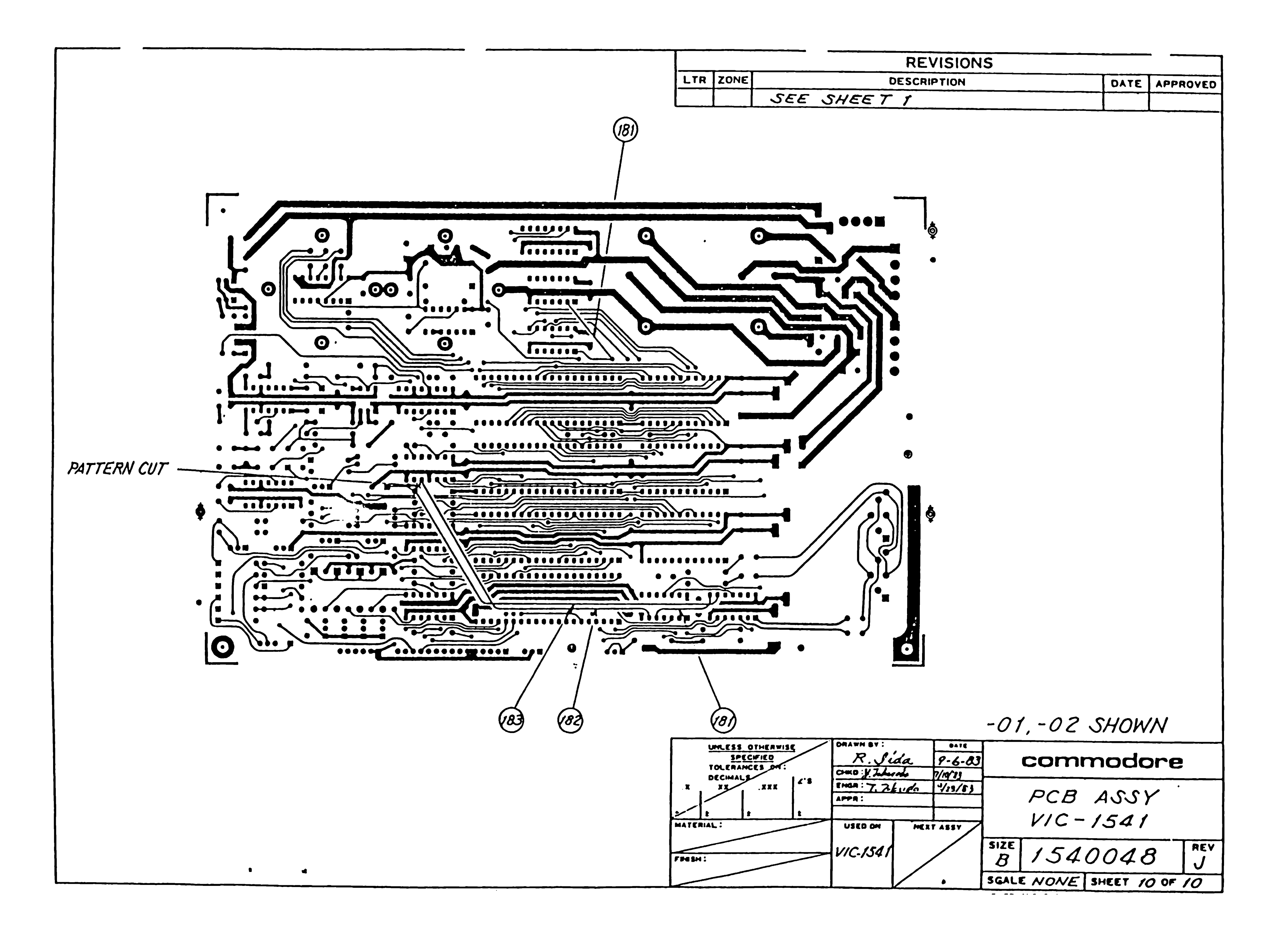
commodore	TITLE: PCB ASSY. VIC-1541	DRWN BY: T. Tokuda	DATE 11/16/82	ENGR: [illegible]	DATE [illegible]	SIZE B	1540048	REV J	SHT 6/10
		CHKD:		APPR: T.M					


REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
172
173
174
177
2PLS
79
2PLS
165
2PLS
166
VR1
VR2
Y1
172
174
177
2PLS
LOT. NO
174
173
177
166
172
79
165
1
- 01 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
.X
.XX
.XXX
∠'S
MATERIAL:
FINISH:
DRAWN BY: K. Maruyama
CHKD: T. Fukuda
ENGR:
APPR:
DATE
USED ON
VIC-1541
NEXT ASSY
commodore
P.C.B ASSY
VIC-1541
SIZE B
1540048
REV J
SCALE NONE
SHEET 7 OF 10



REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
172
173
174
177
2PLS
79
2PLS
165
2PLS
166
VR1
VR2
172
174
171
2PLS
174
173
177
166
172
79
165
1
-02 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
∠'S
DRAWN BY:
K. Maruyama
DATE
CHKD:
12/1/82
ENGR:
APPR:
MATERIAL:
FINISH:
USED ON
VIC-1541
NEXT ASSY
commodore
P.C.B ASSY
VIC-1541
SIZE
B
1540048
REV
J
SCALE NONE
SHEET 8 OF 10


REVISIONS
LTR ZONE DESCRIPTION DATE APPROVED
SEE SHEET 1
PATTERN CUT
PCB NO 1540050 COPYRIGHT 1982
REV C W-1894HB MADE IN JAPAN
179 2PL
PATTERN CUT
-01, -02 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
.X .XX .XXX ∠'S
MATERIAL:
FINISH:
DRAWN BY: R. Iida DATE 9-6-83
CHKD: 7/19/83
ENGR: 9/15/83
APPR:
USED ON VIC-1541
NEXT ASSY
commodore
PCB ASSY
VIC-1541
SIZE B
1540048
REV J
SCALE NONE
SHEET 9 OF 10



REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
181
PATTERN CUT
183
182
181
-01, -02 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
.X
.XX
.XXX
∠'S
MATERIAL:
FINISH:
DRAWN BY:
R. Sida
DATE
9-6-83
CHKD
ENGR
APPR:
USED ON
VIC-1541
NEXT ASSY
commodore
PCB ASSY
VIC-1541
SIZE
B
1540048
REV
J
SCALE NONE
SHEET 10 OF 10

PART NO.	DESCRIPTION
1540005-01	MAIN ASSY VIC-1540 UL
-02	VIC-1540 CSA
-03	VIC-1540 JIS
-04	VC-1540 VDE
1540005-05	MAIN ASSY VIC-1540 BSI
-06	1541 UL
-07	1541 CSA
-08	1541 JIS
-09	1541 VDE
1540005-10	MAIN ASSY 1541 BSI

REV	DATE	DESCRIPTION		
A	8/26/81	PRODUCTION RELEASE		
B	5/24/82	ADDED ITEM 32 FOR UL(FCC)	T.T	
C	8/13/82	ADDED DASH 06 THRU 10	T.T	
D	3/5/83	ADDED ITEM Z8	W.N	
E	3/5/83	REVISED PER ECO 830102		
F	3/25/83	REVISED PER ECO 830131		
G	7/5/83	REVISED PER ECO 830314		
H	7/8/83	REVISED PER ECO 830317		
J	10-13-83	REVISED PER ECO 830419		

3. TO BE USED "LISTED UL & (UL)" ON RATING LABEL.
[Z] MUST USE ITEM 58 WHEN ITEM 48 USED.
1. SHEET 4 OF 4 IS C-SIZE
ASSY DWG.

NOTES.

commodore	TITLE: MAIN ASSY 1541	DRAWN BY: Y. IMAGAWA	DATE: 7/1/81	APPR:	DATE: / /	SIZE: B	1540005	SHEET 1 OF 4

-10	-09	-08	-07	-06	-05	-04	03	-02	01	ITEM	D.S.	PART NUMBER	DESCRIPTION	REF. DES	BEND	NOTES
										1						
										2						
										3						
									1	4		1540004-01	BASE ASSY UL			
								1		5		-02	CSA			
							1			6		-03	JIS			
						1				7		-04	VDE			
					1					8		-05	BSI			
				1						9		-06	UL			
			1							10		-07	CSA			
		1								11		-08	JIS			
	1									12		-09	VDE			
1										13		1540004-10	BASE ASSY BSI			
										14						
										15						
										16						
										17						
										18						
										19						
										20						
										21						
										22						
					1			1	1	23	B	1540016-01	PLATE MODEL VIC-1540			
					S		1	S	S	24		-02	VIC-1540			
						1				25	B	1540016-03	PLATE MODEL VC-1540			
										26						
										27						
1	1	1	1	1						28	B	15400052	PLATE MODEL 1541			
										29						
										30						
										31						
4	4	4	4	4	4	4	4	4	4	32	B	950150-02	FOOT SELF ADUESIVE			SJ 5012
										33						
										34						
										35						
										36						

commodore

TITLE: MAIN ASSY 1541

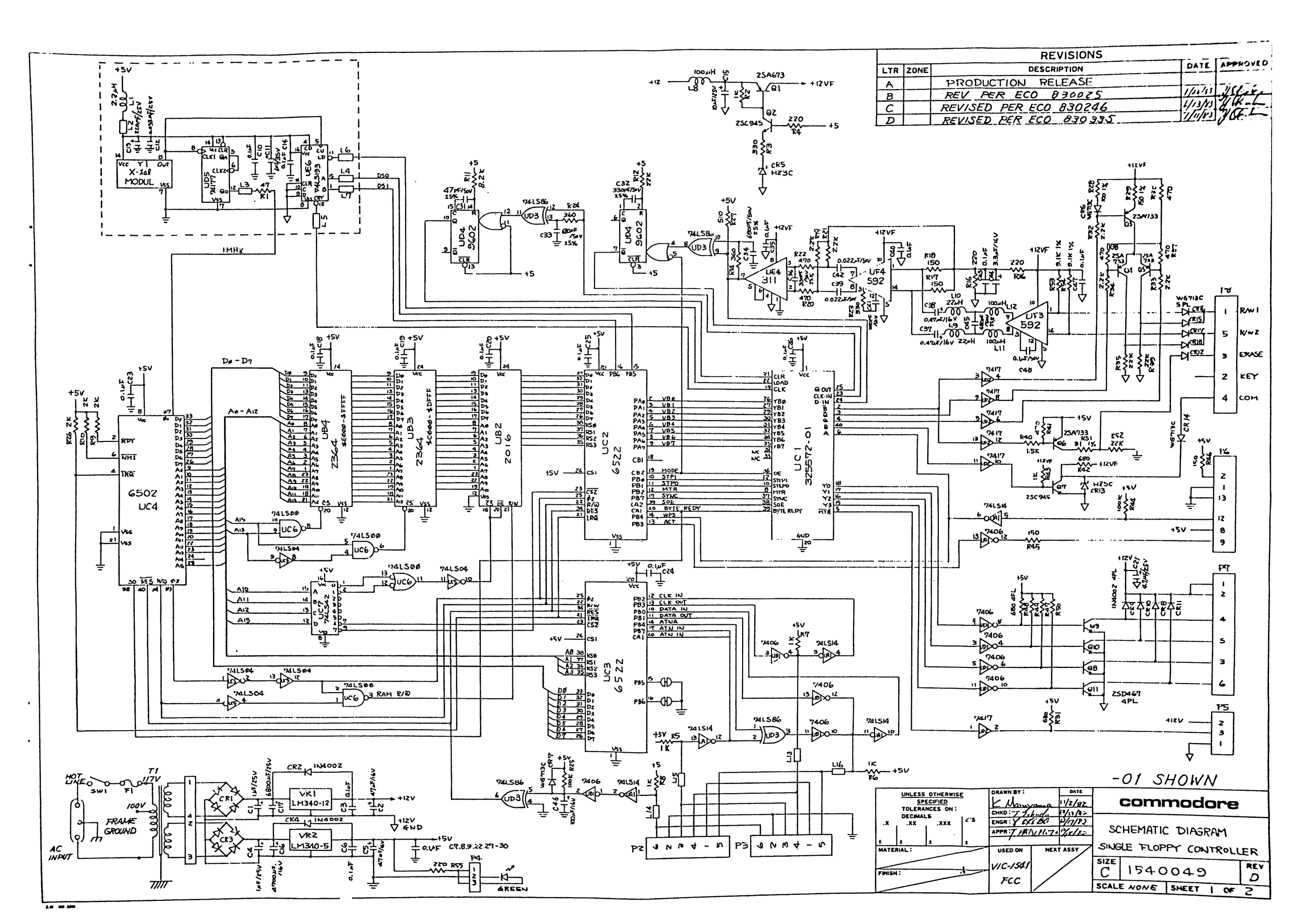
DRAWN BY: K. Maruyama DATE 8/10/82
CHKD: T. Tokuda 8/10/82
APPR: [illegible]
DATE / /
SIZE B
1540005
SHEET 2 of 4

-10	-09	-08	-07	-06	-05	-04	-03	-02	-01	ITEM	D.S.	PART NUMBER	DESCRIPTION	REF. DES	BENO	NOTES
										37						
										38						
										39						
								1		40	B	1540017-01	LABEL RATING VIC-1540			UL, CSA
							1			41		-02	VIC-1540			JIS
						1				42		-03	VC-1540			VDE
					1					43		1540017-04	VIC-1540			BSI
			1	S						44		1540030-01	1541			NOT LISTED UL & CSA. SEE NOTE 3 SUB. FOR ITEM 48.
		1								45		-02	1541			JIS
	1									46		-03	1541			VDE
1										47		-04	1541			BSI
				1						48	B	1540030-06	LABEL RATING 1541			LISTED UL. SEE NOTE 3.
										49						
										50						
										51						
		1	1	1			1	1	1	52	B	1010019-01	LABEL WARNING, FUSE REPLACEMENT			ENGLISH 250V 1A
1	1				1	1				53	B	1010019-02	LABEL WARNING, FUSE REPLACEMENT			ENGLISH 250V 0.5A
			1					1		54	B	4022055	LABEL WARNING, FUSE REPLACEMENT			FRENCH 250V 1A
			1					1		55	B	4022056	LABEL WARNING CSA			
				S					1	56	B	320955-02	LABEL, FCC ID			2
				1						57	B	325553	LABEL, FCC CLASS B			
				1						58	B	320955-14	LABEL, FCC ID			2
										59						
										60						
4	4	4	4	4	4	4	4	4	4	61	B	906800-02	SCREW PAN HEAD M3×10			
										62						
1	1	1	1	1	1	1	1	1	1	63	B	251185-01	TOP CASE ASSY			
										64						
										65						
										66						
										67						
										68						
										69						
										70						
										71						
										72						

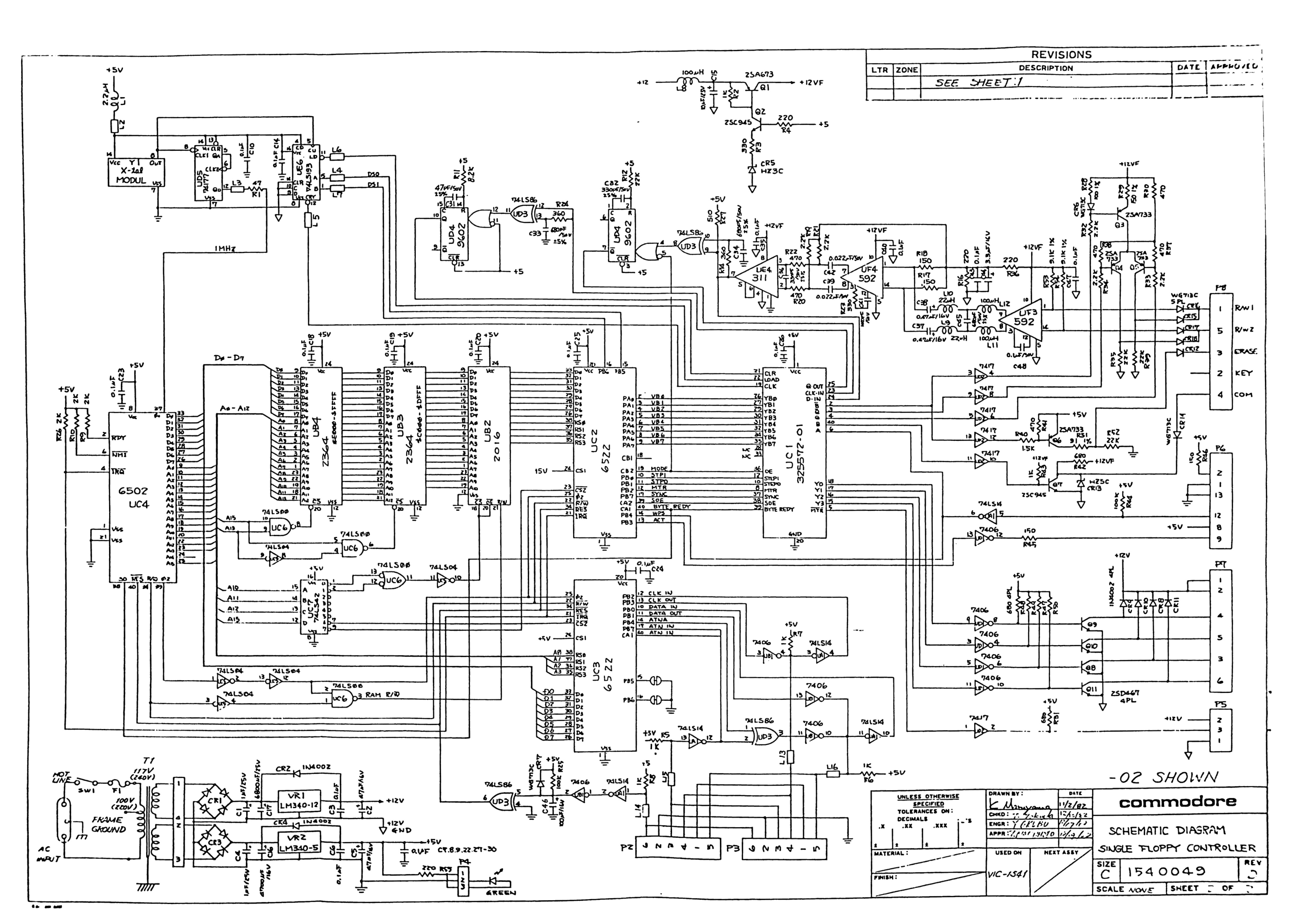
commodore

TITLE: MAIN ASSY 1541

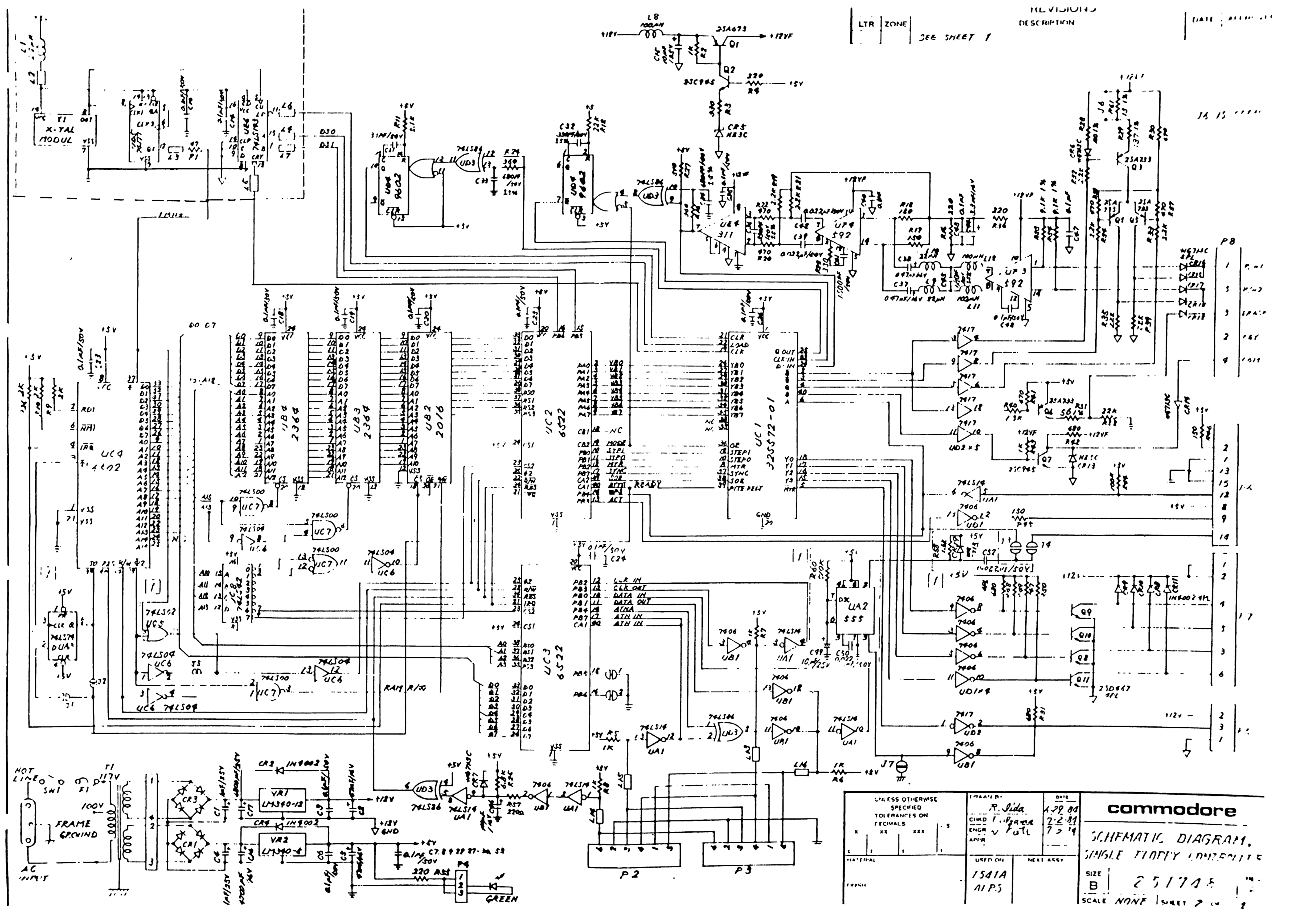
DRAWN BY: K Maruyama DATE 8/10/82
CHKD: T. Tokuda 8/10/83
APPR: [illegible] DATE 3/25/83
SIZE B | 1540005 | SHEET 3 OF 4

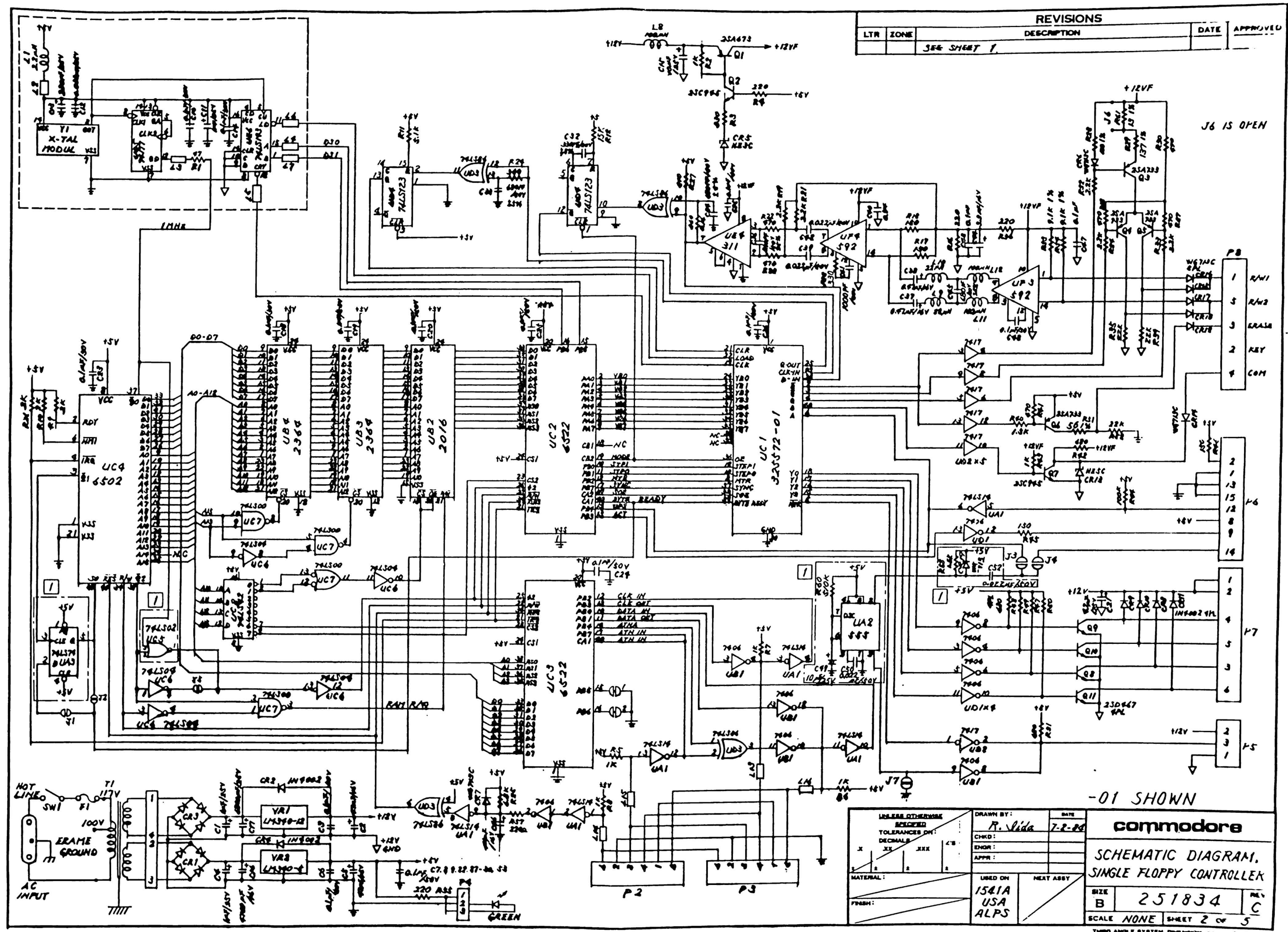


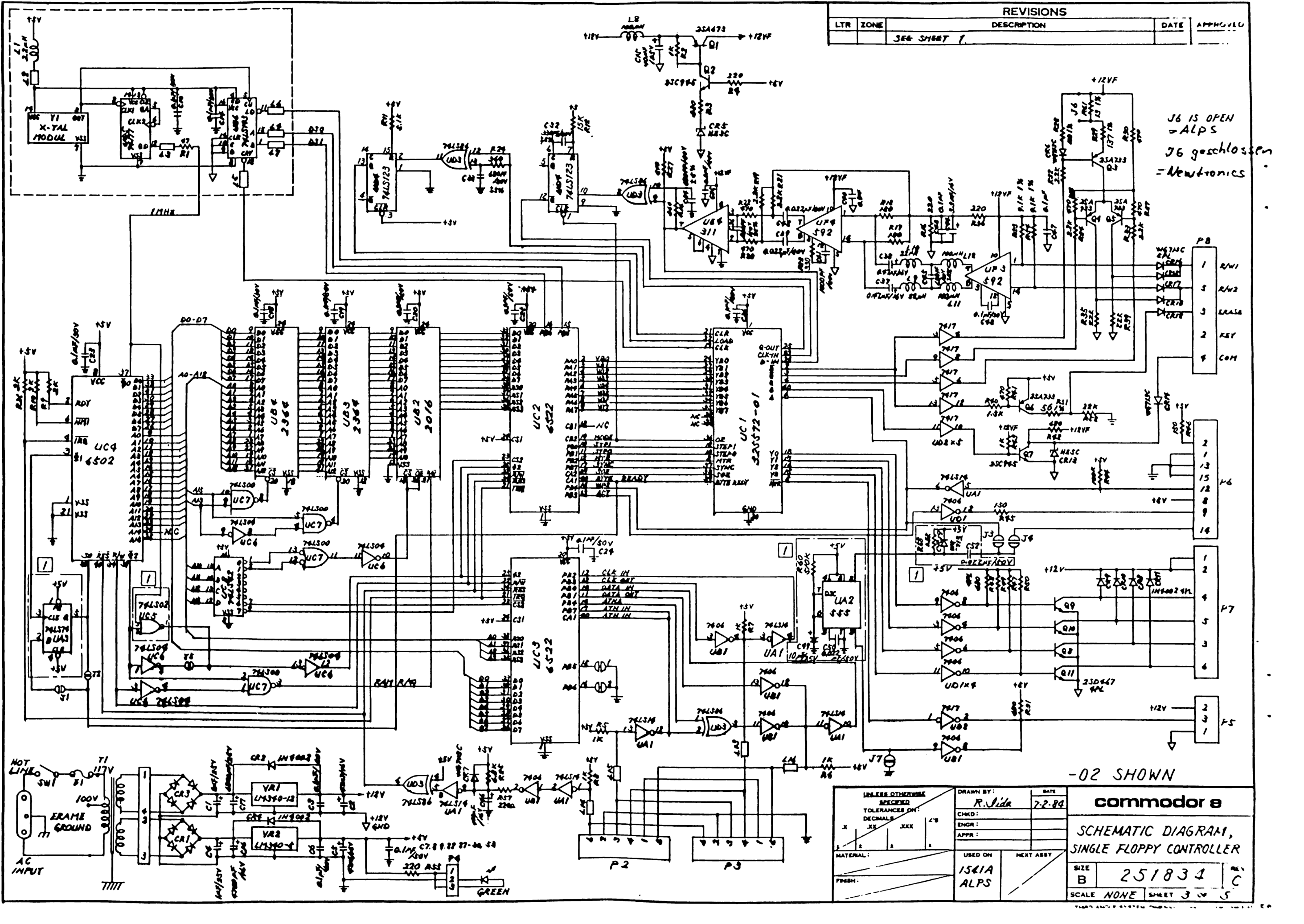
REVISIONS
LTR ZONE DESCRIPTION DATE APPROVED
A PRODUCTION RELEASE
B REV PER ECO 830025
C REVISED PER ECO 830246
D REVISED PER ECO 830335
-01 SHOWN
commodore
SCHEMATIC DIAGRAM
SINGLE FLOPPY CONTROLLER
SIZE C
1540049
REV D
SCALE NONE
SHEET 1 OF 2
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
MATERIAL:
FINISH:
DRAWN BY:
CHKD
ENGR
APPR
DATE
USED ON
NEXT ASSY
VIC-1541
FCC
6502
UC4
6522
UC2
UC3
2364
UB4
UB3
2016
UB2
325572-01
UC1
X-tal MODUL
74LS193
UE6
UD5
9602
UD4
311
UE4
592
UF4
UF3
LM340-12
VR1
LM340-5
VR2
HOT LINE
FRAME GROUND
AC INPUT
GREEN
1MHz
D0 - D7
A0 - A12
RAM R/W



REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
-02 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
.X .XX .XXX
MATERIAL:
FINISH:
DRAWN BY:
CHKD:
ENGR:
APPR:
DATE
11/2/82
USED ON
NEXT ASSY
VIC-1541
commodore
SCHEMATIC DIAGRAM
SINGLE FLOPPY CONTROLLER
SIZE
C
1540049
REV
SCALE NONE
SHEET
OF
6502
UC4
2364
UB4
UB3
2016
UB2
6522
UC2
UC3
325572-01
UC1
X-tal MODUL
74LS193
UE6
74LS177
UD5
9602
UD4
311
UE4
592
UF4
UF3
LM340-12
VR1
LM340-5
VR2
CR1
CR3
AC INPUT
FRAME GROUND
HOT LINE
SW1
F1
T1
117V (240V)
100V (220V)
GREEN
+12V
+12V GND
+5V
P2
P3
P4
P5
P6
P7
P8
R/W1
R/W2
ERASE
KEY
COM

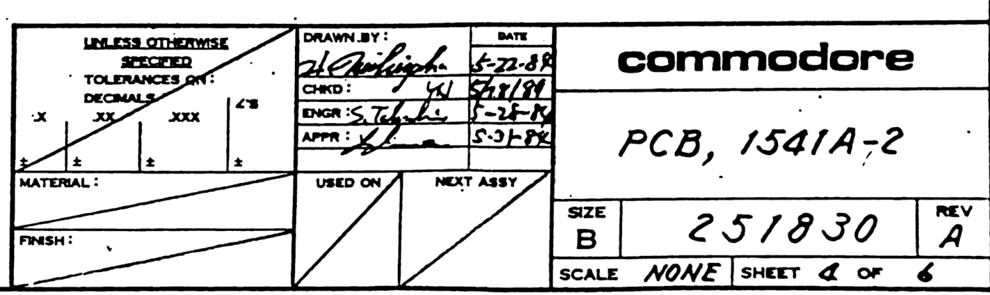

REVISIONS
LTR
ZONE
DESCRIPTION
SEE SHEET 1
X-TAL MODUL
UB4 2364
UB3 2364
UB2 2016
UC2 6522
UC3 6522
UC1 325572-01
UC4 6502
UA2 555
UE4 311
UF4 592
UF3 592
VR1 LM340-12
VR2 LM340-5
P2
P3
P4
P8
HOT LINE
FRAME GROUND
AC INPUT
GREEN
UNLESS OTHERWISE SPECIFIED TOLERANCES ON DECIMALS
DRAWN BY R. Iida
CHKD
ENGR
APPR
DATE
USED ON 1541A ALPS
NEXT ASSY
commodore
SCHEMATIC DIAGRAM, SINGLE FLOPPY CONTROLLER
SIZE B
251748
SCALE NONE
SHEET 2


REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
J6 IS OPEN
X-TAL MODUL
UC4 6502
UB4 2364
UB3 2364
UB2 2016
UC2 6522
UC1 325572-01
UC3 6522
UA2 555
P2
P3
P5
P6
P7
P8
AC INPUT
FRAME GROUND
GREEN
-01 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
DRAWN BY:
CHKD:
ENGR:
APPR:
USED ON
NEXT ASSY
1541A USA ALPS
MATERIAL:
FINISH:
commodore
SCHEMATIC DIAGRAM,
SINGLE FLOPPY CONTROLLER
SIZE B
251834
REV C
SCALE NONE
SHEET 2 OF 5


REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
J6 IS OPEN
= ALPS
J6 geschlossen
= Newtronics
-02 SHOWN
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
MATERIAL:
FINISH:
DRAWN BY:
R. Iida
DATE
7-2-84
CHKD:
ENGR:
APPR:
USED ON
NEXT ASSY
1541A
ALPS
commodore
SCHEMATIC DIAGRAM,
SINGLE FLOPPY CONTROLLER
SIZE
B
251831
REV
C
SCALE NONE
SHEET 3 of 5
UC4
6502
UB4
2364
UB3
2364
UB2
2016
UC2
6522
UC3
6522
UC1
325572-01
UA2
555
X-TAL
MODUL
P2
P3
P4
P5
P6
P7
P8
AC
INPUT
FRAME
GROUND
HOT
LINE
VR1
LM340-12
VR2
LM340-5
GREEN

REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		





UNLESS OTHERWISE SPECIFIED TOLERANCES ON: DECIMALS	DRAWN BY:	DATE	commodore
.X ± / .XX ± / .XXX ± / ∠S ±	[signature]	5-22-84	PCB, 1541A-2
	CHKD: [signature]	5/28/84	
	ENGR: S. Takahashi	5-28-84	
	APPR: [signature]	5-31-84	
MATERIAL:	USED ON	NEXT ASSY	SIZE B — 251830 — REV A
FINISH:			SCALE NONE — SHEET 4 OF 6

THIRD ANGLE SYSTEM DIMENSION : mm

251834 C

REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE	3-15-84	
B		REVISED PER ECO 840312	9-10-84	

1. FLOPPY DISK DRIVE

1. THIS SPECIFICATION DESCRIBES A THIN MINIFLOPPY DISK DRIVE FOR USE IN COMPUTER SYSTEM.
2. GENERAL SPECIFICATION

2-1	CAPACITY (UNFORMATTED)	
	MEDIA	201K BYTE
	TRACK	5000 ~ 6153 BYTE
2-2	SECTOR METHOD	SOFT
2-3	SPINDLE ACTUATOR	BELT
2-4	HEAD POSITIONING METHOD	METAL BAND
2-5	ROTATIONAL SPEED	300 RPM
2-6	TRACK DENSITY	48 TPI
2-7	NUMBER OF TRACKS	35 (40 MAX)
2-8	TRANSFER RATE	250K BIT/S
2-9	RECORDING METHOD	GCR
2-10	ACCESS TIME	
	TRACK TO TRACK	12M SEC
	SETTLING	15M SEC
2-11	MOTOR START TIME	1 SEC MAX

3. ENVIRONMENTAL

3-1	TEMPERATURE	
	OPERATING	10 ~ 47°C
	STORAGE	-22 ~ 60°C
3-2	HUMIDITY (WITHOUT CONDENSATION)	
	OPERATING	20 ~ 80 %RH
	STORAGE	1 ~ 95 %RH

4. RELIABILITY

4-1	ERROR RATE	
	SOFT READ ERRORS	1×10^{-9}/BIT
	SEEK ERRORS	1×10^{-6}/SEEKS
4-2	MTBF (MOTOR ON DUTY 20%)	8×10^{3} HOURS
4-3	MEDIA LIFE	3×10^{6} PASSES PER TRACK

5. POWER

5-1	12 ± 0.6 V DC	1.8 A MAX.

6. MOUNTING

6-1	TOP LOADING	YES
	FRONT LOADING	
	DISKETTE VERTICAL	YES
	DISKETTE HORIZONTAL	
	STEPPING MORTOR UP	NO
	STEPPING MORTOR DOWN	YES

7. HEAD
SINGLE R/W GAP WITH SEPARATE STRADDLE ERASE

7-1	WRITE CURRENT	7 MA P-P
7-2	ERASE CURRENT	40 MA
7-3	READ OUTPUT (THROUGH 1541 AMP.)	190MVP-P MIN. AT 5162 FCI (TR.34)
		1.4VP-P MAX. AT 1768 FCI (TR.00)
7-4	RESOLUTION	

$$\frac{\text{EOUT } 5162 \text{ FCI}}{\text{EOUT } 2581 \text{ FCI}} \geq 0.55 \text{ (TR.34)}$$

$$\frac{\text{EOUT } 3536 \text{ FCI}}{\text{EOUT } 1768 \text{ FCI}} \leq 0.95 \text{ (TR.00)}$$

8. STEPPING MOTOR

8-1	ONE STEP ANGLE	1.8°
8-2	OPERATING VOLTAGE	12V ±10% DC
8-3	MOTOR CURRENT PER PHASE	400 MA MAX.
8-4	DRIVE MODE	1 PHASE

9. SPINDLE MOTOR

9-1	MOTOR SPEED	2340 RPM
9-2	STALL CURRENT	1.1 A
9-3	DRIFT	
	INITIAL	300RPM ± 1.5%
	LONG TIME	300RPM ± 2.9%

10. PHYSICAL DIMENTION (INCLUSIVE OF FRONT PANEL)

10-1	HEIGHT	42.9 MM
10-2	WIDTH	193 MM
10-3	LENGTH	149.3 MM
10-4	WEIGHT	950 G (2.09 POUND) MAX.

11. TRACK 00 LIMITER — +0.25 MM (+0.01 IN) / +0.1 MM (+0.004 IN)

UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS: .X ± .XX ± .XXX ± ∠'S ±
MATERIAL:
FINISH:

DRAWN BY: N. Hanamura	DATE 1-10-84
CHKD:	3/13/84
ENGR: S. Takahashi	3-14-84
APPR:	3-14-84

USED ON | NEXT ASSY

commodore

FLOPPY DISK NEWTRONICS

SIZE B | 251643 | REV E
SCALE NONE | SHEET 1 OF 5

THIRD ANGLE SYSTEM DIMENSION

LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		

12. HEAD ALIGNMENT (PERFORMED AT TR.16)

	TESTED AT FACTORY	FIELD
RADIAL	80 %	60 %
HYSTERESIS	80 %	60 %

ALIGNMENT STANDARD

DYMEK ALIGNMENT DISKETTE DK501-2

CE ALIGNMENT TRACK AT 1.9167 ± 0.0003 INCHES

13. AZIMUTH (PERFORMED AT TRACK 34) ±12′ MAX.

ALIGNMENT DISKETTE DK501-2

CE ALIGNMENT TRACK AT 1.5417 ± 0.002 INCHES

14. DOOR LEVER TORQUE

14-1 OPENING TORQUE 0.4 – 1.4 kg·CM

14-2 CLOSING TORQUE 0.25 – 0.75 kg·CM

15. DRIVE MOTOR INTERFACE

SIGNAL LEVEL TTL

FAN IN 5

LOGICAL LEVEL	MOTOR
H	OFF
L	ON

16. STEPPING MOTOR DRIVE SEQUENSE

PHASE.	ORG.	BRW.	YEL.	BLK.	
NO. 1	ON				TR. 2
NO. 2		ON			
NO. 3			ON		TR. 1
NO. 4				ON	
NO. 1	ON				TR. 0

* RED ; COMMON

17. SHOCK TEST

OPERATING 0.5 G MAX. (2~50 Hz)

NON OPERATING OR STORAGE CONTINUOUS 5 G MAX.

SINGLE 25 G MAX.

UNLESS OTHERWISE SPECIFIED TOLERANCES ON: DECIMALS .X .XX .XXX ∠'S ± ± ± ±

MATERIAL:

FINISH:

DRAWN BY: N. Hanamura DATE 1-10-'84

CHKD: [illegible] 3/13/84

ENGR: S. Takahashi 3-14-84

APPR: [illegible] 3-14-84

USED ON NEXT ASSY

commodore

FLOPPY DISK NEWTRONICS

SIZE B 251643 REV B

SCALE NONE SHEET 2 OF 5

REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		

2. HEAD ASSEMBLY

1. SCOPE
   THIS SPECIFICATION DESCRIBES A HEAD ASSEMBLY FOR USE D500 FLOPPY DISK DRIVE.

2. PHYSICAL

2-1 HEAD TYPE	SINGLE R/W GAP SEPARATE STRADDLE ERASE
2-2 HEAD/MEDIA INTERFACE	INCONTACT, CERAMIC AND FERRITE WEAR SURFACES
2-3 READ/WRITE GAP	100 MICRO INCHES
2-4 CLEANING	THE HEAD CONSTRUCTION SHALL ALLOW PERIODIC CLEANING WITH METHYL-ALCOHOL OR 1-1-1 TRICHLOROETHANE WITHOUT HARM.

3. PERFORMANCE

3-1 TEMPERATURE RANGE	OPERATING 0~52°C STORAGE -45~+71°C
3-2 HUMIDITY RANGE	OPERATING 8~80%RH STORAGE NOCONDITIONING
3-3 DESIGN LIFE	1600 HOURS IN CONTACT WITH DISKETTE AT 18 G PRESSURE PAD FORCE
3-4 PRESSURE PAD FORCE	18 ± 2 G A 0.197" DIAMETER PAD
3-5 RECORDING METHOD	GCR
3-6 RECORDING MEDIA	DATALIFE MD525-01
3-7 HEAD/MEDIA VELOCITY	45~70.7 INCHES/SEC, AT 300 RPM
3-8 DATA PACKING DENSITY	UP TO 5536 FCI AT 300 RPM ON TRACK 39
3-9 WRITE CURRENT	7 MA P-P
3-10 ERASE CURRENT	40 MA
3-11 READ OUTPUT (THROUGH 1541 AMP)	190 MV P-P MIN. AT 5162 FCI (TR.34) 1.4 VP-P MAX. AT 1768 FCI (TR.00)

3-12 RESOLUTION

$$\frac{EOUT\ 5162\ FCI}{EOUT\ 2581\ FCI} \geq 0.55\ (TR.34)$$

$$\frac{EOUT\ 3536\ FCI}{EOUT\ 1768\ FCI} \leq 0.95\ (TR.00)$$

3-13 OVERWRITE MODULATION — WRITE 1F (1768 FCI). THEN WRITE 2F (3536 FCI) THE RATIO OF 2F AMPLITUDE TO REMAINING (OVERWRITTEN) 1F IS 30 DB MIN.

4. ELECTRICAL

4-1 INDUCTANCE	READ/WRITE, PER LEG 600±120 μH BALANCE, LEG TO LEG 1±0.2 ERASE 1.5 MH
4-2 RESISTANCE	READ/WRITE, PER LEG 25 OHMS MAX. ERASE 20 OHMS MAX.
4-3 RESONANCE FREQUENCY	400 KHZ MIN.
4-4 INSULATION RESISTANCE	50 MOHMS MIN. (100V DC) BETWEEN COILS AND CORE
4-5 GROUNDING	BACK BAR OF R/W CORE SHALL BE ELECTRICALLY BONDED TO R/W CENTER TAP

5. TEST CONDITIONS
   THE AMPLIFIER WHICH WILL BE USED TO TEST READ/WRITE PARAMETERS SHALL HAVE AN INPUT IMPEDANCE OF 15 KOHMS SHUNTED BY 20 PF

6. CONNECTOR PIN

HOUSING
HIROSE HIF 3G-5S-254C OR EQUIVALENT
TERMINAL
HIROSE HIF 3-2428SCFA OR EQUIVALENT

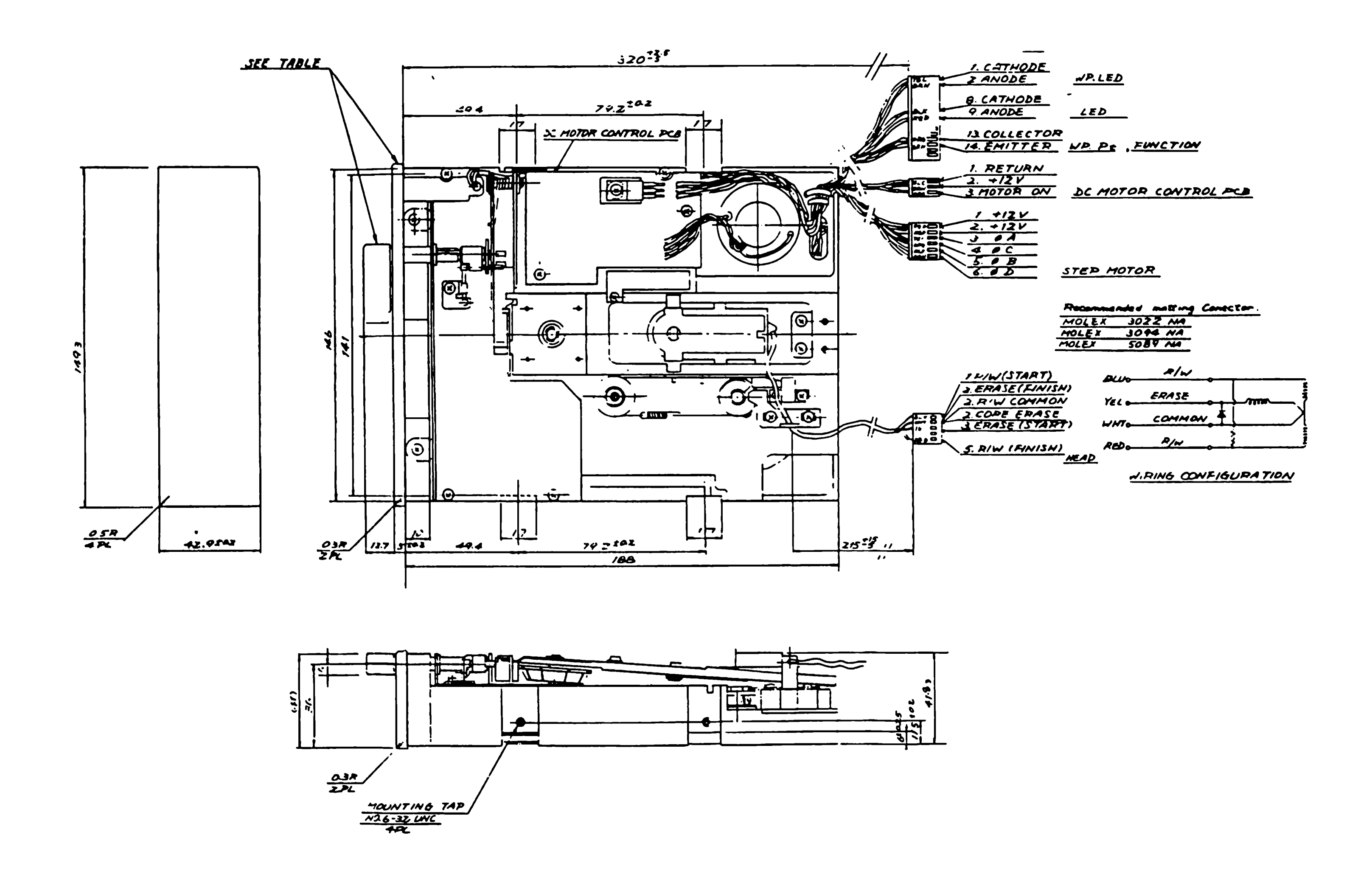
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: DECIMALS .X ± .XX ± .XXX ± ∠'S ±	DRAWN BY: N. Hanamura	DATE 1-11-'84	commodore
	CHKD: [illegible]	3/13/84	FLOPPY DISK NEWTRONICS
	ENGR: S. [illegible]	3-14-84	
	APPR: [illegible]	3-18-84	
MATERIAL:	USED ON	NEXT ASSY	SIZE B · 251643 · REV E
FINISH:			SCALE NONE · SHEET 3 OF 5

THIRD ANGLE SYSTEM DIMENSION

PART NO.	COLOR
251643-01	BROWN
251643-02	DARK GREY

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
1		SEE SHEET 1		



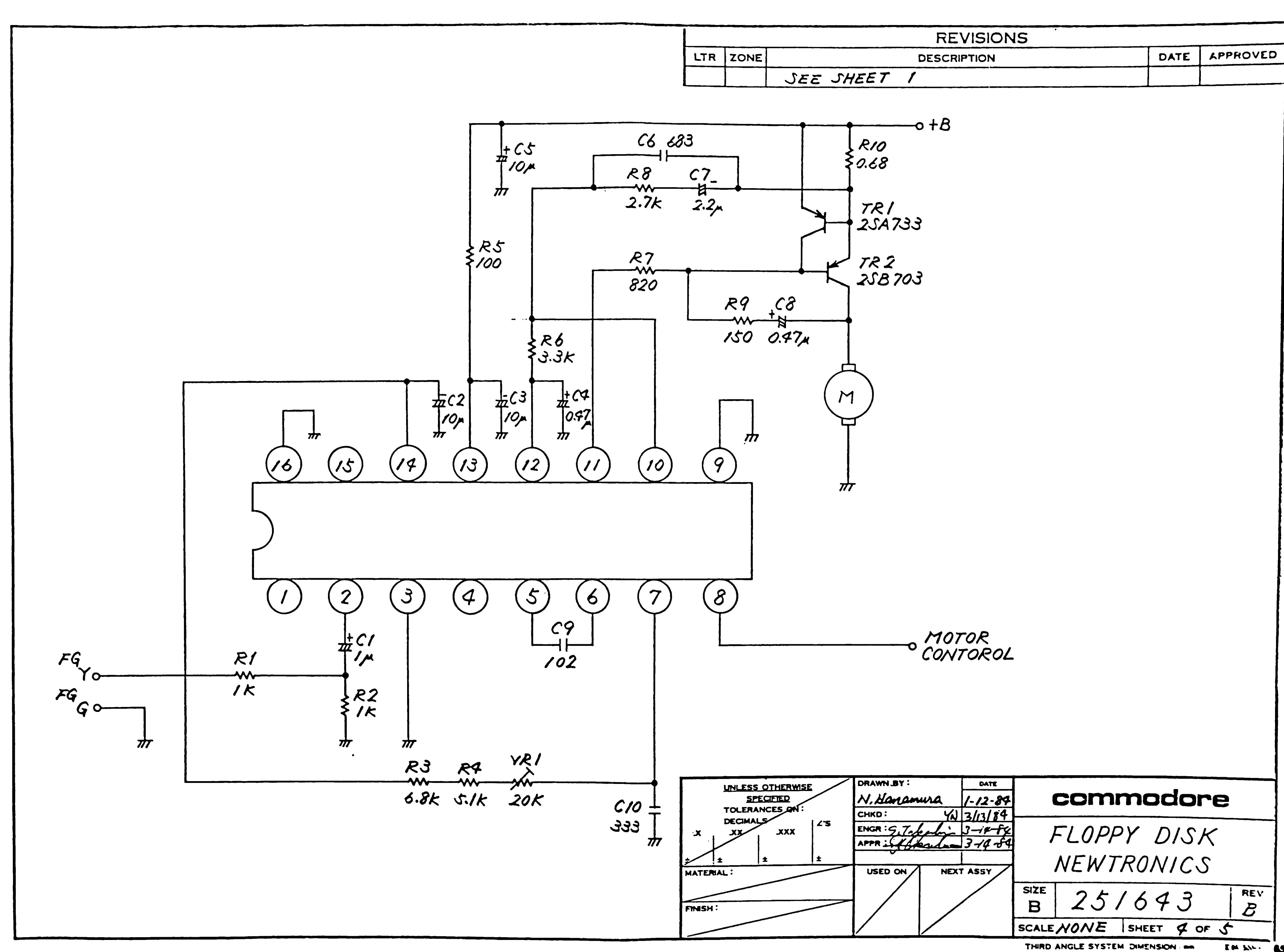
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commodore

FLOPPY DISK
NEWTRONICS

SIZE D 251643

SCALE NONE


REVISIONS
LTR
ZONE
DESCRIPTION
DATE
APPROVED
SEE SHEET 1
+B
C5 10μ
C6 683
R8 2.7k
C7 2.2μ
R10 0.68
TR1 2SA733
TR2 2SB703
R5 100
R7 820
R9 150
C8 0.47μ
R6 3.3K
M
C2 10μ
C3 10μ
C4 0.47μ
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
C9 102
MOTOR CONTOROL
C1 1μ
FG Y
FG G
R1 1K
R2 1K
R3 6.8k
R4 5.1k
VR1 20K
C10 333
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON:
DECIMALS
.X
.XX
.XXX
∠'S
MATERIAL:
FINISH:
DRAWN BY:
DATE
N. Hanamura
1-12-84
CHKD:
3/13/84
ENGR:
3-14-84
APPR:
3-14-84
USED ON
NEXT ASSY
commodore
FLOPPY DISK NEWTRONICS
SIZE B
251643
REV B
SCALE NONE
SHEET 4 OF 5
THIRD ANGLE SYSTEM DIMENSION: mm

PART NO.	DESCRIPTION
1540048-01	PCB ASSY. VIC-1541. FCC (UL) USED LOGIC ARRAY.
1540048-02	PCB ASSY. VIC-1541. USED LOGIC ARRAY.

[Fold Here]

DWG. NO. 1540048

TITLE: PCB ASSY. VIC-1541.

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE	12/18/82	T. MATSUMOTO
B		REVISED PER ECO-830085	7/28/83	[signature]
C		REVISED PER ECO 830125	3/25/83	[signature]

1. SHEET 7 & 8 OF 8 ARE B-SIZE ASSY DWG

NOTES-UNLESS OTHERWISE SPECIFIED:

VC-1541

commodore	DRAWN BY: T. Tokuda	DATE 11/16/82	ENGR: [signature]	12/17/82	SIZE B	SHEET 1 OF 8
	CHKD:		APPR: T. MATSUMOTO	12/18/82		

QUANTITY REQD PER PART/ DASH NO. 02	01	ITEM	DS	PART NUMBER	DESCRIPTION			REF DES	BEND	NOTES
1	1	1	B	1540050	P C BOARD 238 x155 x1.6t					GLASS EPOXY. G-10
		2								
		3								
		4								
	REF	5	C	1540049-01	SCHEMATIC DIAGRAM					USED LOGIC ARRAY. FCC (UL)
REF		6	C	1540049-02	SCHEMATIC DIAGRAM					USED LOGIC ARRAY.
		7								
		8								
		9								
		10								
		11								
1	1	12	B	901435-01	IC	MPS 6502	CPU	UC4		
2	2	13	↑	901437-01	↑	MPS 6522	VIA	UC2, UC3		
1	1	14		901229-03		2364-197	ROM	UB4		$EØØØ ~ $FFFF
1	1	15		325302-01		2364-130	ROM	UB3		$CØØØ ~ $DFFF
1	1	16		325572-01		LOGIC ARRAY	40 PIN DIP	UC1		
1	1	17		901521-01		74LS00	2-NAND	UC6		
1	1	18		901521-17		74LS42	DEC.	UC7		
1	1	19		901522-01		7417	BUFFER	UD2		
1	1	20		901521-32		74LS86	2-EX-OR	UD3		
2	2	21		901522-06		7406	INV. BUF.	UB1, UD1		
1	1	22		901521-02		74LS04	INV.	UC5		
1	1	23		901521-30		74LS14	SCH. INV.	UA1		
1	1	24		901521-26		74LS193	4 BIT. COU.	UE6		
1	1	25		901521-54		74LS197		UD5		
S	S	26		901522-03		74177		UD5		SUBSTITUTE FOR ITEM 25.
1	1	27		901510-01		9602		UD4		
1	1	28	↓	901523-04	↓	LM311		UE4		
2	2	29	B	901523-08	IC	NE592		UF3, UF4		
1	1	30	B	325502-03	IC	TMM2016P	RAM	UB2		
S	S	31	B	325502-01	IC	M58725P	RAM	UB2		SUBSTITUTE FOR ITEM 30.
S	S	32	B	901522-30	IC	7407		UD2		SUBSTITUTE FOR ITEM 19.
		33								
		34								
		35								
		36								
		37								

commodore	TITLE: PCB ASSY. VIC-1541	DRWN BY: T. Tokuda	DATE 11/16/82	ENGR: YO	DATE 12/17	SIZE B	1540048	REV C	SHT 2/8
		CHKD:		APPR: T. M	12/18				

QUANTITY REQD PER PART / DASH NO. 02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
2	2	38	B	902671	TRANSISTOR NPN 2SC945	Q2, Q7		
S	S	39		902693-01	2SC1815	Q2, Q7		SUBSTITUTE FOR ITEM 38.
4	4	40		902679	2SD467	Q8 - Q11		
S	S	41		902682	NPN 2SC2120	Q8 - Q11		SUBSTITUTE FOR ITEM 40.
1	1	42		902720	PNP 2SA673	Q1		
4	4	43		902717	2SA733	Q3 - Q6		
S	S	44	B	902744-01	TRANSISTOR PNP 2SA1015	Q3 - Q6		SUBSTITUTE FOR ITEM 43.
		45						
		46						
		47						
		48						
		49						
		50						
		51						
6	6	52	B	900750-02	DIODE, RECTIFIER IN4002	CR2,4,8-11		
8	8	53		900850-05	SIGNAL WG713C	CR6,7,12,14-18		
S	S	54		900850-01	SIGNAL IN4148	CR6,7,12,14-18		SUBSTITUTE FOR ITEM 53.
1	1	55		325505-01	ZENER 3.3V 500mW ±5%	CR5		HZ3C-2
S	S	56		325505-02	3.3V 500mW ±5%	CR5		HZ4A-1 SUB. FOR ITEM 55.
S	S	57		900948-06	3.3V 500mW ±5%	CR5		IN5226B SUB. FOR ITEM 55.
1	1	58		325506-01	5.1V 500mW ±5%	CR13		HZ5C-2
S	S	59		900948-11	ZENER 5.1V 500mW ±5%	CR13		IN5231 SUB. FOR ITEM 58.
2	2	60	B	900756-01	DIODE BRIDGE 1.5A 50V	CR1, CR3		KBP-005
		61						
		62						
		63						
1	1	64	B	325566-01	CRYSTAL MODULE 16 MHz 50PPM	Y1		
S	S	65	B	325566-02	CRYSTAL MODULE 16 MHz 100PPM	Y1		SUBSTITUTE FOR ITEM 64.
		66						
		67						
		68						
1	1	69	B	325513-01	COIL, INDUCTOR 2.2μH	L1		
2	2	70	B	325513-02	COIL, INDUCTOR 22μH	L9, L10		
3	3	71	B	325513-03	COIL, INDUCTOR 100μH	L8, L11, L12		
		72						
		73						
		74						

commodore	TITLE: PCB ASSY. VIC-1541	DRWN BY: T. Takuda	DATE 11/16/82	ENGR: [illegible] APPR: T.M	DATE 12/17 12/18	SIZE B	1540048	REV C	SHT 3/8
		CHKD:							

QUANTITY REQD PER PART / DASH NO. 02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
1	1	75	B	901528-04	VOLTAGE REGULATOR 12V, 1.5A	VR 1		LM340-12 TO-3
1	1	76	B	901528-03	VOLTAGE REGULATOR 5V, 1.2A	VR 2		LM340-5 TO-3
		77						
		78						
2	2	79	B	904914	INSULATION MYLAR TO-3			
S	S	80	B	325551-01	INSULATION SILICONE TO-3			SUBSTITUTE FOR ITEM 79.
		81						
		82						
2	2	83	B	903361	CONNECTOR, DIN 6P	P2, P3		
		84						
		85						
		86						
4	4	87	B	904150-06	SOCKET IC LOW PRO 40 PIN			
3	3	88	B	904150-03	SOCKET IC LOW PRO 24 PIN			
		89						
		90						
		91						
		92						
		93						
		94						
		95						
1	1	96	B	251065-04	HEADER ASSY. 2.5 PITCH 4PIN	P8		MOLEX 5048-04AG
1	1	97	↓	325562-06	↓ ↓ 6PIN	P7		↓ 3022-06A
1	1	98	↓	325562-15	↓ ↓ 15PIN	P6		↓ 3022-15A
2	2	99	↓	325562-03	↓ 2.5 PITCH 3PIN	P4, P5		↓ 3022-03A
1	1	100	B	903316-04	HEADER ASSY. 3.96 PITCH 4PIN	P1		MOLEX 5271-04A
		101						
		102						
		103						
		104						
		105						
		106						
		107						
		108						
		109						
		110						
		111						

commodore	TITLE: PCB ASSY. VIC-1541	DRWN BY: T. Tokuda	DATE 10/16/82	ENGR: [signature]	DATE 12/17	SIZE B	1540048	REV C	SHT 4/8
		CHKD:		APPR: T.M	12/18				

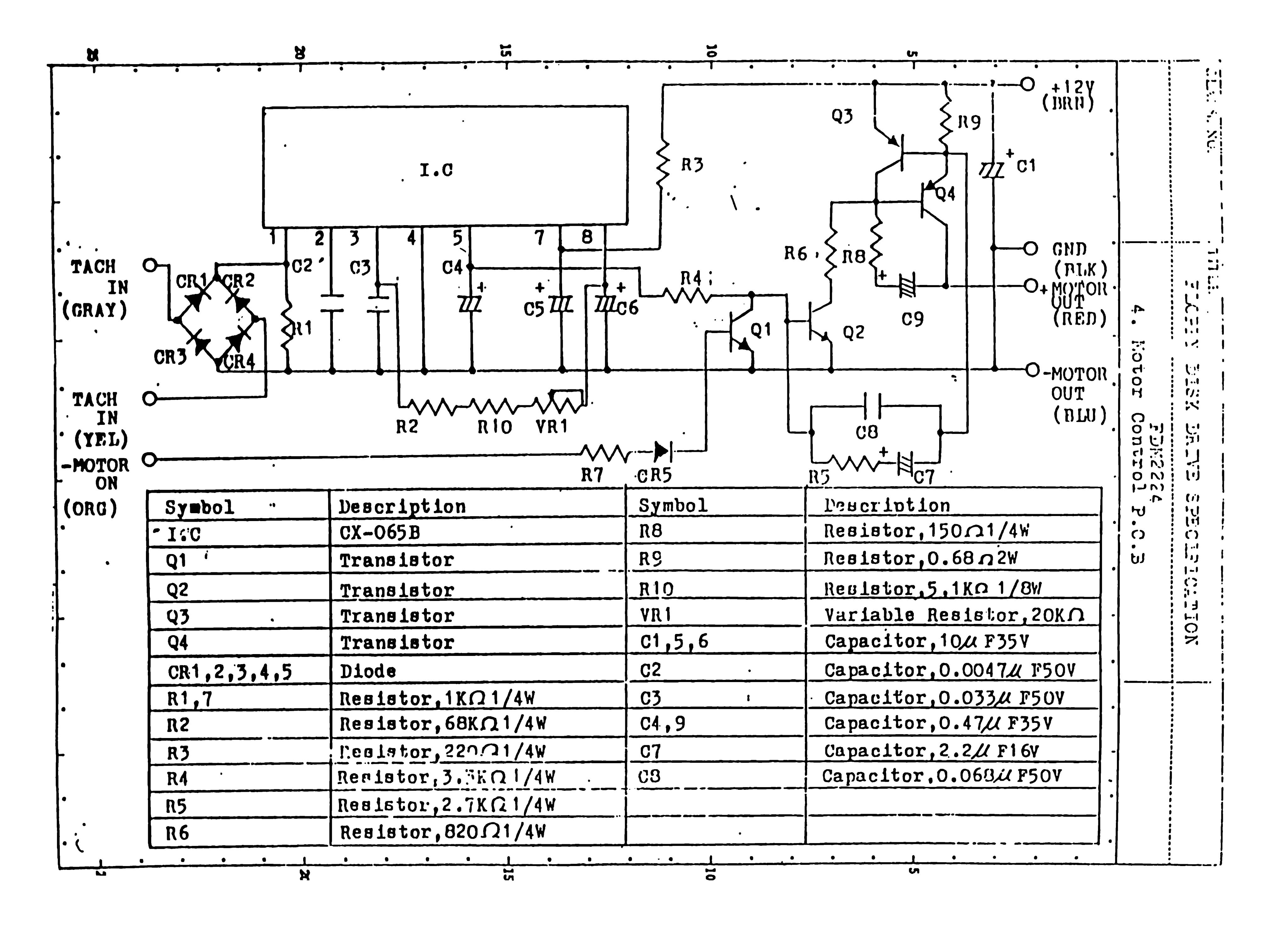
02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
	1	112	B	900301-04	CAPACITOR ELECT. 220μF/10V	C13		
1	1	113		900101-45	6800μF/25V	C17		
1	1	114		900101-32	4700μF/16V	C16		
2	2	115		900100-33	47μF/16V	C2, C5		
2	2	116		900100-32	ELECT. 1μF/25V	C1, C4		
1	1	117		900402-15	TANTALIUM 10μF/25V	C15		
1	1	118		900402-11	TANTALIUM 3.3μF/25V	C44		
1	1	119		900010-52	CERAMIC 150pF/50V	C31		±5%
2	2	120		-53	330pF/50V	C32, C36		±5%
3	3	121		-54	680pF/50V	C45, C33, C34		±5%
1	1	122		-25	1000pF/50V	C41		
24	24	123		-20	0.1μF/50V	C3, 6-10		14, 18, 19, 20, 22-30, 35, 40, 43, 47, 48
2	2	124		900010-14	CERAMIC 0.022μF/50V	C39, C42		
1	1	125		900100-40	ELECT. 100μF/16V	C46		
2	2	126		900402-17	TANTALIUM 0.47μF/25V	C37, C38		
	1	127		-08	4.7μF/25V	C21		
	1	128		900402-14	TANTALIUM 1μF/16V	C11		
	1	129	B	900465-02	CAPACITOR CERAMIC 0.033μF/25V	C12		
		130						
		131						
		132						
		133						
1	1	134	B	901550-56	RESISTOR CARBON 1/4W ±5% 47Ω	R1		
2	2	135	B	901550-108	RESISTOR CARBON 1/4W ±5% 360Ω	R14, R24		
4	4	136		-89	150Ω	R17, 18, 45, 46		
4	4	137		-52	220Ω	R4, 16, 36, 55		
2	2	138		-14	330Ω	R3, R23		
6	6	139		-58	470Ω	R20, 22, 30, 37, 38, 41		
1	1	140		-38	510Ω	R27		
6	6	141		-31	680Ω	R31, 42, 47-50		
6	6	142		-01	1kΩ	R2, 5, 6, 7, 8, 43		
3	3	143		-53	2kΩ	R9, 10, 26		
6	6	144		-18	2.2kΩ	R11, 19, 21, 32-34		
1	1	145		-69	1.5kΩ	R40		
4	4	146		-12	22kΩ	R12, 35, 39, 52		
2	2	147	B	901550-07	RESISTOR CARBON 1/4W ±5% 100kΩ	R25, R44		
		148						

commodore

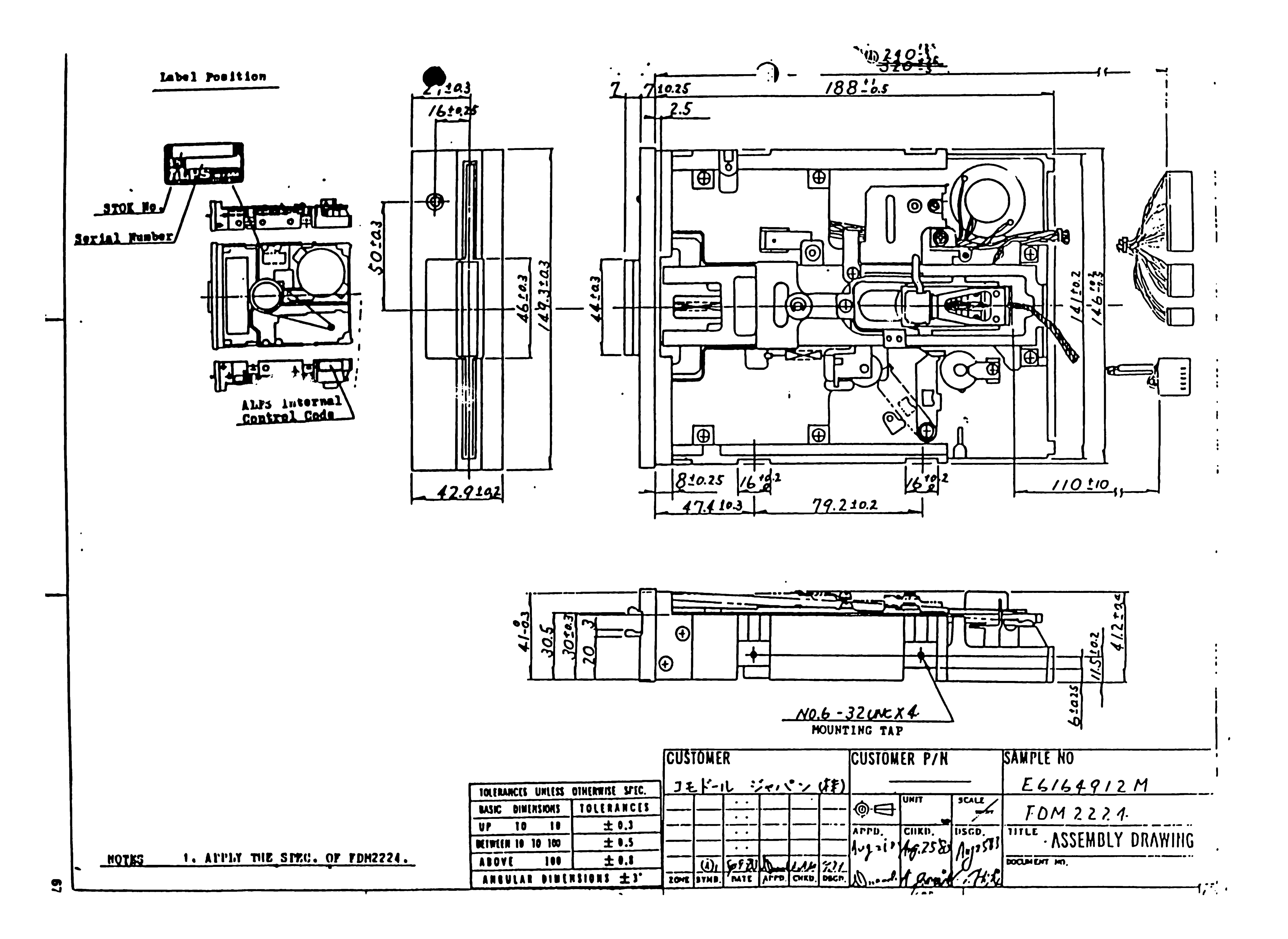
TITLE: PCB ASSY. VIC-1541

DRWN BY: T. Tokuda	DATE 11/16/82	ENGR:	DATE 12/7	SIZE B	1540048	REV C	SHT 5/8
CHKD:		APPR: T. M	12/8				

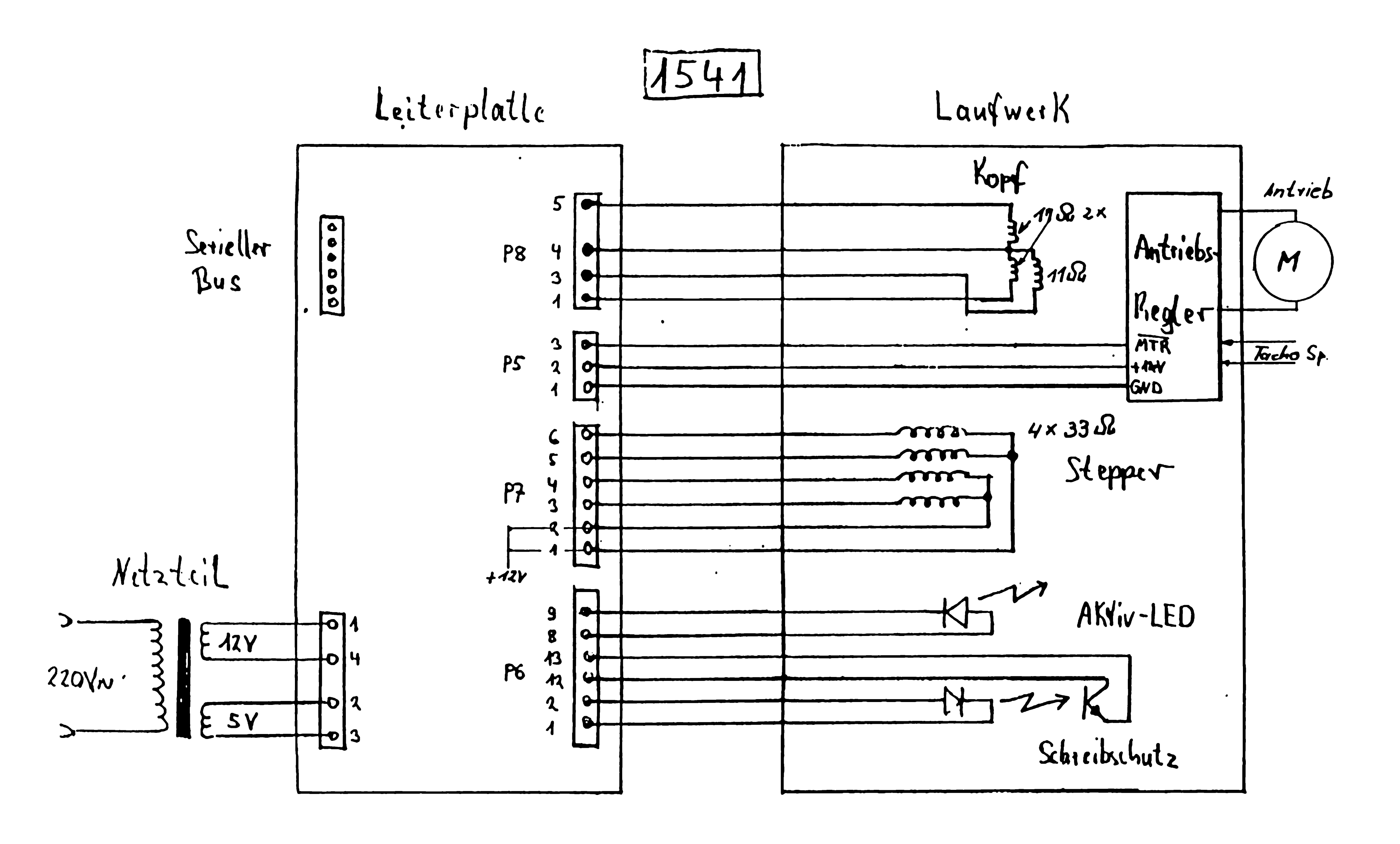
4. Motor Control P.C.B



Symbol	Description	Symbol	Description
I.C	CX-065B	R8	Resistor,150Ω1/4W
Q1	Transistor	R9	Resistor,0.68Ω2W
Q2	Transistor	R10	Resistor,5.1KΩ 1/8W
Q3	Transistor	VR1	Variable Resistor,20KΩ
Q4	Transistor	C1,5,6	Capacitor,10μ F35V
CR1,2,3,4,5	Diode	C2	Capacitor,0.0047μ F50V
R1,7	Resistor,1KΩ1/4W	C3	Capacitor,0.033μ F50V
R2	Resistor,68KΩ1/4W	C4,9	Capacitor,0.47μ F35V
R3	Resistor,220Ω1/4W	C7	Capacitor,2.2μ F16V
R4	Resistor,3.[illegible]KΩ1/4W	C8	Capacitor,0.068μ F50V
R5	Resistor,2.7KΩ1/4W		
R6	Resistor,820Ω1/4W		



TOLERANCES UNLESS OTHERWISE SPEC.	
BASIC DIMENSIONS	TOLERANCES
UP TO 10	± 0.3
BETWEEN 10 TO 100	± 0.5
ABOVE 100	± 0.8
ANGULAR DIMENSIONS ± 3°	


1541
Leiterplatte
Laufwerk
Serieller Bus
Netzteil
220V~
12V
5V
P8
P5
P7
P6
+12V
Kopf
19Ω 2x
11Ω
Antriebs-Regler
MTR
+12V
GND
Antrieb
M
Tacho Sp.
4x33Ω
Stepper
AKtiv-LED
Schreibschutz



S E R V I C E - I N F O 7/84

Umbauvorschrift FLOPPY 1540/1541

Bei einigen Geräten vom Typ C64 trat ein Defekt an den Peripheriebausteinen auf, wenn nicht eine bestimmte Anschlußreihenfolge eingehalten wurde (erst Peripherie-Kabel,dann Netz-Kabel). (Siehe Seite 11 unten)

Ferner wurde der Datenbus zeitweise blockiert, wenn mehrere Peripheriegeräte gleichzeitig betrieben wurden (z.B. zwei Floppies oder Floppy und Drucker).

Die Ursache hierfür lag am RESET-Verhalten und am Betriebssystem der 1541 Floppy.

Um diese Mängel zu beseitigen gelten folgende Umbauvorschriften:

Seite 2 bis 4 :	lange Platinenausführung PCB No. 1540007 Rev.A bis Rev.E
Seite 5 bis 7 :	kurze Platinenausführung PCB No. 1540050 ab Rev.A

Folgende Testprogramme sind für die Floppy 1541 erhältlich:

970140.c	sfterr	Softerrortest	(C64)
970141.a	sfterr	Softerrortest	(VC20 mit 16 K)
970106.c	sfteff	Softerrortest mit Stoptest	(C64)
970150.a	fintst	Finaltest	(C64)
970127.a	alpadj	ALPS Drive Adjustment	(C64)
ary-03		Stop Adjustment	(C64 oder VC20)
f3-03		Finaltest mit Kompatibilitätstest	(VC20 mit 3 K)
970140.c15	sftary	für Tests nach dem Umbau	(C64)



S E R V I C E - I N F O

1) **Zeitkonstante UG3 :**

	Original	ersetzen durch
R 26	2,2 kOhm	5,1 kOhm
C 33	150 pF	33 pF

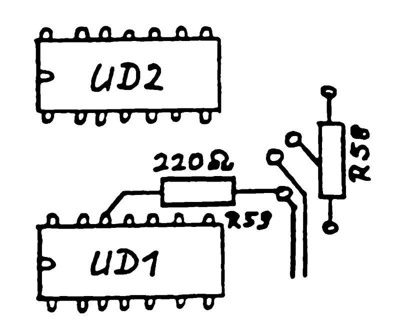
2) **RESET - Schaltkreis :**

	Original	ersetzen durch
R 43	100 kOhm	6,8 kOhm
R 59	nicht vorhanden	220 Ohm

3) **DOS - Rom :**

	Original		ersetzen durch	
UAB 5	901229-03 (1541)		901229-05 AE	EPROM mit
oder	325303-01 (1540)	oder	901229-06 AA	Adapter
		bzw.	901229-05	ROM

4) **Einbauhinweis zu R 59 :**



Der neue RESET - Schaltkreis :

Leiterbahnunterbrechung (2·Stellen)

Drahtverbindung (50mm)

Unterbrechung (2 Stellen)

Verbindung (40mm)

Unterbrechung (2 Stellen)

Verbindung (47mm)

Verbindung (60mm)

Verbindung (60mm)

Lötseite



SERVICE-INFO

1) Zeitkonstante UD4 :

	Original	ersetzen durch
R 11	2,2 kOhm	5,1 kOhm
C 31	150 pF	33 pF

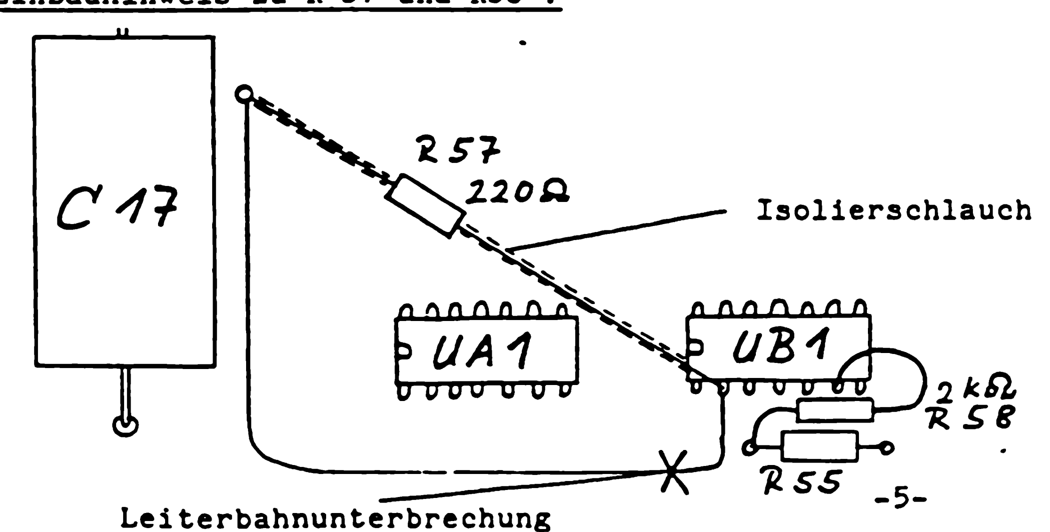
2) RESET - Schaltkreis :

	Original	ersetzen durch
R 25	100 kOhm	6,8 kOhm
R 57	nicht vorhanden	220 Ohm
R 58	nicht vorhanden	2 kOhm

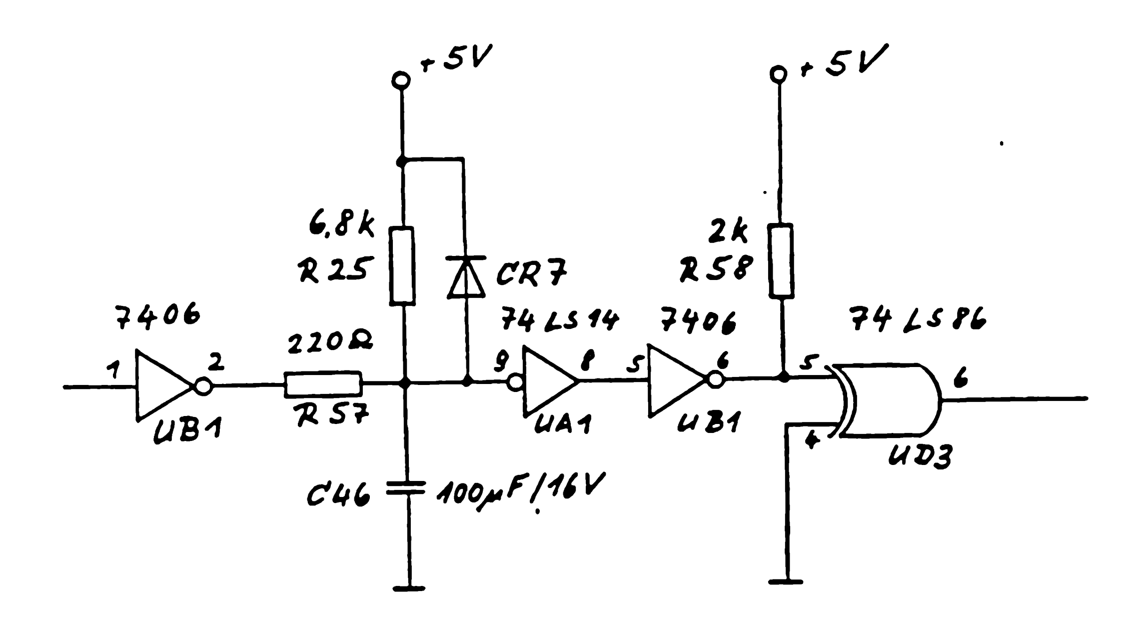
3) DOS - Rom :

	Original		ersetzen durch	
UB 4	901229-03		901229-05 AE	EPROM mit
		oder	901229-06 AA	Adapter
		bzw.	901229-05	ROM

4) Einbauhinweis zu R 57 und R58 :



Der neue RESET - Schaltkreis :



Drahtverbindung (30mm)

Drahtverbindung (119mm)

Drahtverbindung (104mm)

Leiterbahnunterbrechung

Lötseite



S E R V I C E - I N F O

Hinweis zum DOS:

Durch ein Versehen wurde in einige umgebaute Floppies 1541 ein EPROM 2764 mit der Bezeichnung 901229-05 Ae eingesetzt. Dieses hat die gleichen Fehler wie das ROM 901229-03 und muß wie unter Punkt 3 beschrieben ausgetauscht werden.

Die Version 901229-05 AE hat noch einen Fehler, der jedoch nur durch Abbruch des Formatierens (z.B. durch Öffnen der Laufwerksklappe) auftritt: Beim nächsten Formatierversuch fehlen die ersten Spuren, ohne daß eine Fehlermeldung erscheint. Nach einem solchen Abbruch sollte deshalb die Floppy aus- und wieder eingeschaltet oder folgende Zeile vor dem nächsten Formatierbefehl abgeschickt werden:

```
OPEN1,8,15:PRINT#1,"M-W"CHR$(81)CHR$(0)CHR$(1)CHR$(255):CLOSE1
```

Laufwerk

Das Laufwerk wurde geändert, um das Verstellen von Stopeinstellung und Alignment bei Erwärmung zu verhindern.
Außerdem wurde der Luftspalt der Stopeinstellung vergrößert. Die neuen Laufwerke sind wie folgt gekennzeichnet:

A) Seriennummer > 00938841 oder

B) Markierung (grüner Strich) auf der Oberseite des Laufwerks neben dem Befestigungspunkt für die Spiralfeder!

Interfacestecker

Sollte der Interfacestecker schwergängig sein, kann dies durch folgende Handgriffe korrigiert werden:

- Die sechs Befestigungsschrauben des Chassis im Boden lockern.
- Befestigungsschrauben festziehen.
- Falls erforderlich, Deckel vor dem Festziehen nach rechts drücken.



Tests nach dem Umbau

Stopring:

Für die Kontrolle und Justage der Stopeinstellung dienten folgende Programme:

Alte Laufwerke (0,25 mm Luftspalt): 970127 (Step 6)
Neue Laufwerke (0,35 mm Luftspalt): ARY-Ø3 (Stop Limit Test)

Justage: Die Stopeinstellung ist grundsätzlich mit dem Testprogramm ARY-Ø3 zu testen und evtl. zu justieren (auf 0.35 mm Luftspalt). Nach der Justage Schraube mit Lack sichern.

Track-1-Test: Mit dem Testschritt S des Testprogramms 970106.C ist die Stopeinstellung zu überprüfen. Dazu muß eine Track-1-Diskette verwendet werden.

Track-1-Diskette: Diese Diskette erzeugt man durch folgendes Verfahren:

- Physikalisches Löschen einer Diskette im äußeren Bereich (z.B. mit kräftigem Permanentmagnet, Löschung mit Oszilloskop am Leseverstärker überprüfen!).

- Formatieren von Spur 1. Dies sollte mit einem im Alignmet kontrollierten Drive erfolgen.
  (Kommando: open1,8,15,"nØ:x,ØØ)
  Sofort nachdem der Schreib-/Lesekopf auf Spur 2 positioniert hat, ist die Laufwerksklappe zu öffnen.



S E R V I C E - I N F O

Softerrortest: 2 Passes mit Programm 970140.C, in dem Zeile 1080 geändert wurde: NP=ØØ2
Starten des Programms mit RETURN
Testdauer: 8 min.
Am Ende muß die rote LED 1 x blinken = OK.
2 x blinken = zu viele Fehler im 1. Pass
3 x blinken = kein Zugriff zur LOG-Datei
4 x blinken = Abbruch beim Formatieren
Nach Aus- und Einschalten der Floppy mit Ø die LOG-Datei auslesen.
Es muß erscheinen:
Summary of Drive Ø
Number of Passes: 2
Total Errors = Ø
Countable Errors = Ø

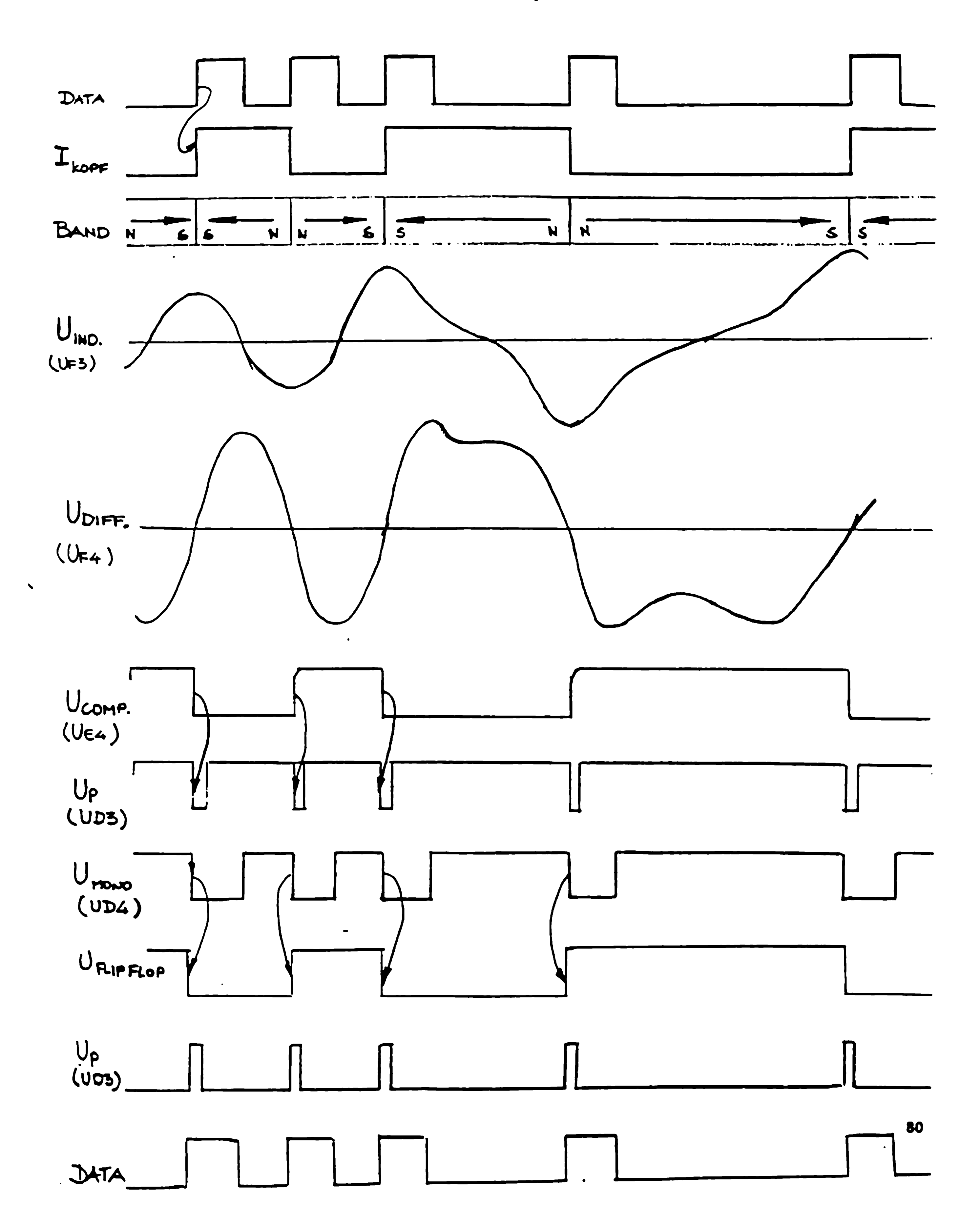
HINWEIS: Um Ausfälle infolge von Zentrierfehlern zu vermeiden, sollte die Laufwerksklappe langsam während des Drehens geschlossen werden (z.B. unmittelbar nach dem Einschalten der Floppy).

Da der Antriebsriemen bei Kälte schlecht haftet, sollte die Floppy vor dem Test Raumtemperatur haben.

Für die Kontrolle des Alignments dient das Programm 970127(STEP 5: Alignment Test). Als Alignmentdiskette läßt sich auch eine 8050/8250 Alignmentdiskette verwenden, wenn auf das Sync-Signal zum Triggern des Oszilloskops verzichtet wird.

ACHTUNG: Der C64 und die anzuschließenden Fernseher entsprechen der Schutzklasse 2, während die Floppy 1541 mit dem Chassis auf Erde liegt. Dadurch kann der Portbaustein 6526 (U2) im C64 bei häufigem Verbinden und Trennen des Interfacesteckers (z.B. beim Softerrortest) zerstört werden. Um dies zu vermeiden, ist die Masse des C64 auf Erde zu legen (z.B. über das Halteblech am Cartridge-Stecker) oder Schutzdioden in den C64 einzulöten (siehe Bild S. 12).

Signalverlauf der Daten
1541
(Analog - Teil)



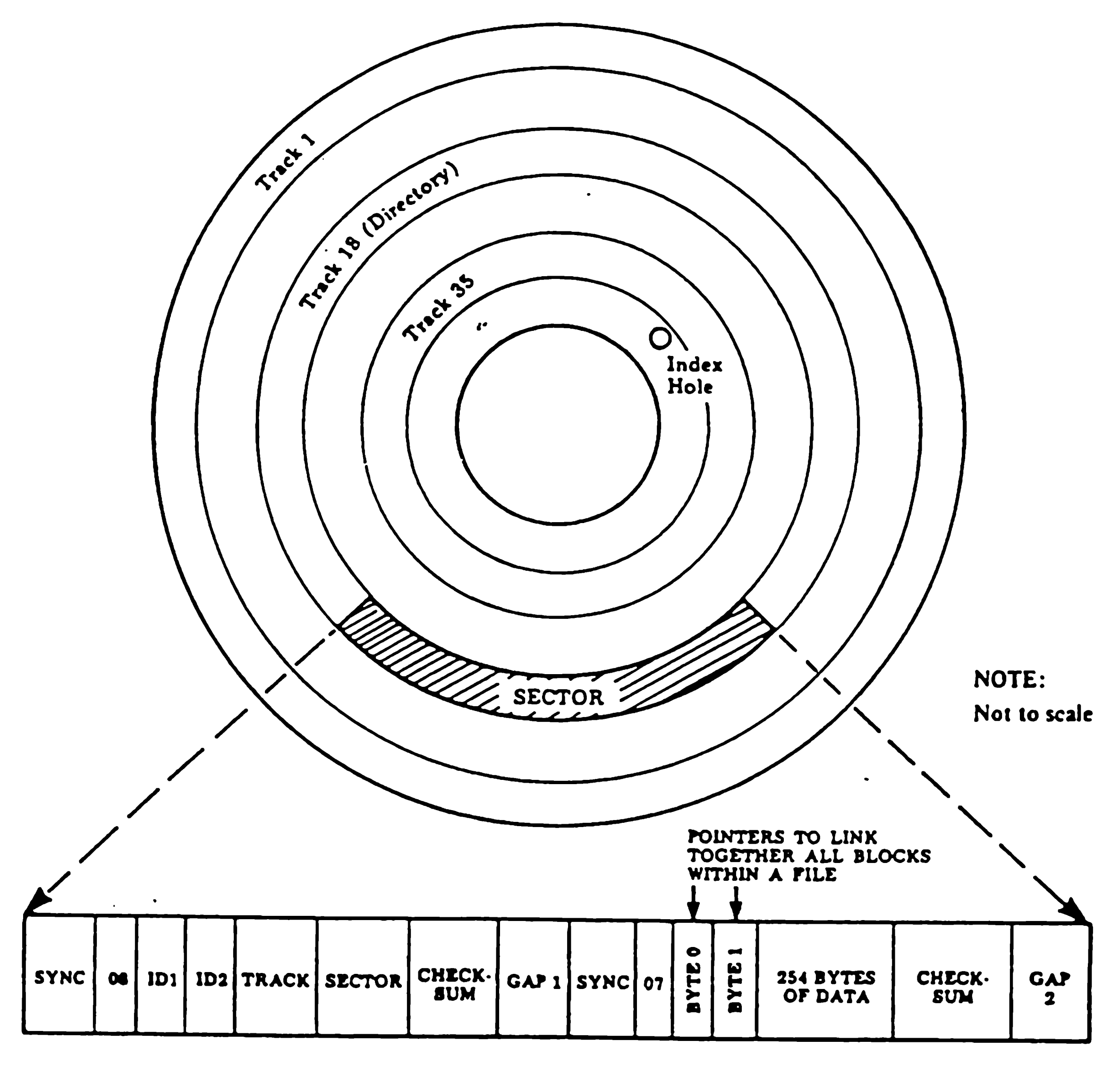


Table 6. Block Distribution By Track

2040, 3040 Track number	Block or Sector Range	Total
1 to 17	0 to 20	21
18 to 24	0 to 19	20
25 to 30	0 to 17	18
31 to 35	0 to 16	17
4040 Track number	**Block or Sector Range**	**Total**
1 to 17	0 to 20	21
18 to 24	0 to 18	19
25 to 30	0 to 17	18
31 to 35	0 to 16	17
8050 Track number	**Block or Sector Range**	**Total**
1 to 39	0 to 28	29
40 to 53	0 to 26	27
54 to 64	0 to 24	25
65 to 77	0 to 22	23

S E R V I C E - I N F O R M A T I O N

Betr.: PCB-ASSY 250442 und 250446	CBM 1541
Motoranlauf beim Einlegen der Diskette	
Bedeutung der Jumper J1 bis J7	BSW, 09.11.84

Auf den oben angegebenen Leiterplatten befinden sich nicht bestückte Bauteilepositionen. Nach der Bestückung folgender Positionen bewirkt ein von der Schreibschutzlichtschranke erzeugtes Signal, daß der Antriebsmotor beim Einlegen einer Diskette ca. 6 Sekunden lang dreht. Dadurch ist ein besseres Zentrieren der Diskette gewährleistet, wenn die Laufwerksklappe innerhalb dieser Zeit geschlossen wird.

Position	Bauteil	Kommentar
UA2	NE555	Timer
R58	1.5k	Widerstand
R60	510k	Widerstand
C49	10uF/25V	Elko
C50	22nF/50V	Kondensator
C52	22nF/50V	Kondensator
CR19	1n4148	Diode
J3		geschlossen
J4		offen
J7		offen

Die Jumper J1, J2 und J5 sollten nicht nachträglich verändert werden, sie sind normalerweise geschlossen. Falls die Positionen UA3 und UC5 bestückt sind, sind J2 und J5 offen.
Der Jumper J6 paßt den Schreibstrom an den jeweiligen Laufwerkstyp an.

Laufwerk	ALPS	NEWTRONICS
J6	offen	geschlossen

Die gültigen Schaltunterlagen haben folgende Nummern:
251748 Rev.E (1541A, PCB-ASSY 250442, PCB-Nr.251777, UD4=9602)
251834 Rev.C (1541A-2,PCB-ASSY 250446, PCB-Nr.251830, UD4=74LS123)

TESTPROGRAMM FÜR FLOPPY 1540/41

MIT ALPS LAUFWERKEN

Mit C - 64

"970106.c	sfterr"	Schreib/Lese Dauertest + Geschwindigkeitstest + Stopkragen-Einstellung + Blinktest
"970127.a	alpadj"	Laufwerk Justage Alignment
"970150.a	fintst"	Ausdruck des sfterrtest
"970140.c	sfterr"	Schreib/Lese Dauertest + Geschwingigkeit

"970140.c15 sftary"	Schreib/Lese Dauertest(2Läufe) +Stopkragen Justage +Spur 1 Test
"Einstellprogramm"	Laufwerk-Justage Alignment

Mit VC - 20

"970141.a	sfterr"	Schreib/Lese Dauertest nur mit 16 K Erweiterung
"ary - 03"		Stopkragen Justage C 64 + VC 20
"f3 - 03"		Stopkragen Justage + LED Kontrolle + Schreib/Lesetest (Kompatibilität) nur mit 3K Erweiterung

1540 Drive Einstellung

Die Kopf-Einstellung für die VC-1540 Floppy wird in der gleichen Weise durchgeführt, wie die Einstellung der CBM 4040 Drives. Z.B.: Der Stepper wird positioniert auf die Alignmentspur (17) und der Kopf ist dann richtig justiert, wenn beide Amplituden gleich groß sind (cat eye's).

A. Die folgenden Teile werden benötigt:

a. eine Commodore 2040-3040-4040 Alignment Diskette
b. eine formatierte Diskette
c. das VC-1540 Einstell Programm
d. einen Kreutzschlitz- und einen Flach-Schraubenzieher
e. ein 1-Strahl Oszilloscope mit externer Triggerung

B. Laden sie das VC-1540 Einstellprogramm

C. 1. entfernen Sie die beiden Plastikschalen des Gehäuses der Floppy
2. lösen Sie die Platine vom Metallgehäuse

D. Stellen Sie ihr Oszilloscope ein auf folgende Werte:
Kanal1
externe Triggerung
20mV/cm
20ms/cm

Messung mit dem Tastkopf an UH5 Pin1 oder 14. Externe Triggerung auf UC2 Pin 9

E. Starten Sie das Programm, so daß Sie die Befehlsübersicht erhalten. Legen Sie die Alignment-Diskette in die Floppy ein.

Befehlsübersicht:

i - Eine Spur nach innen
a - Eine Spur nach aussen
b - Kopf fährt zum Anschlag und positioniert auf Spür 17 (Alignment Spur)
h - Testet ob nach einem Spurwechsel der Kopf wieder exakt auf die Alignment Spur (17) zurück fährt.(Hysteresestep)
e - Einstellung der Spur 1 auf 0.25mm Abstand des Steppermotors zum Anschlag
t - Testet ob eine formatierte Diskette beschrieben und gelesen werden kann

HR 8.7.82 SK

F. Alignment Einstellung

Die Alignment Einstellung ist dann ok wenn nach bump sound und Hysteresestep die cat eye's eine kleinstmögliche Abweichung in der Amplitude (maximal 20%) voneinander aufweisen.

Ist dies nicht der Fall, so muß der Steppermotor verdreht werden, bis die Amplitudendifferenz im Toleranzbereich liegt. Um den Steppermotor zu bewegen lösen Sie die beiden Schrauben auf der Unterseite der Floppy. Sind die cat eye's nicht zu sehen, so muß der Steppermotor durch Eintippen von "i" oder "a" nach innen oder nach außen gedreht werden, um so die Alignment-Spur zu finden.

Durch Eintippen von "b" (bump sound) wird erneut versucht, nach verfahren des Kopfes zum Endanschlag, die Alignment-Spur zu finden.
Durch Eintippen von "h" (Hysterese) erfolgt ein Hysterese-Step.
Nach jedem dieser beiden Verfahren muß die Toleranz der Amplitude kleiner als 20% sein.

Nun schrauben Sie den Steppermotor wieder fest; danach muß die Einstellung ein weiteres Mal überprüft und gegebenenfalls korrigiert werden.

G. Endanschlag-Enstellung

Um den Endanschlag einzustellen drücken Sie die Taste "e" (Endanschlag). Dann fährt der Kopf von Spur 17 auf Spur 1. Nun sollte zwischen dem Endanschlagswinkel und der Anschlagscheibe des Steppermotors 0.25mm Platz sein.

H. Motorgeschwindigkeitseinstellung

Auf der Unterseite der Floppy befindet sich eine Bohrung an der man das Potentiometer VR1 verdrehen kann um die Motorgeschwindigkeit einzustellen. Die richtige Drehzahl ist erreicht wenn man auf der Stroposkopescheibe ein stehendes Bild sieht.

I. Lese und Schreibtest

Legen Sie eine formatierte Diskette ein. Die Diskette wird neu formatiert und danach wird versucht auf jeder 2.Spur zu schreiben und zu lesen. Treten keine Fehler auf so ist die Floppy richtig eingestellt.

HR 8.7.82 SK

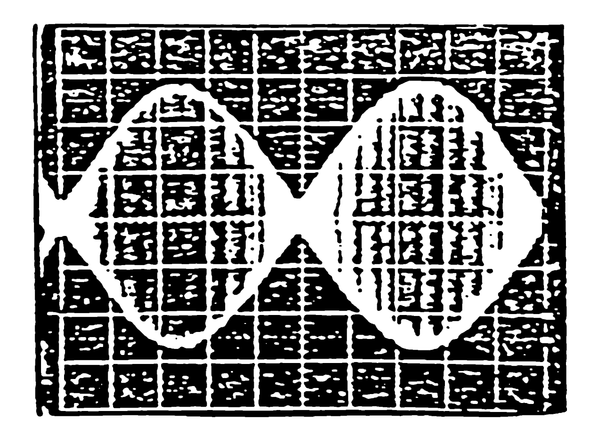
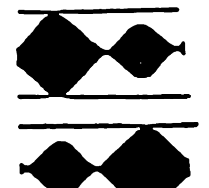


Bild 1 : Optimal eingestellte cat eye's

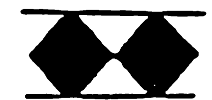
schlecht eingestelltes Laufwerk



muß nachjustiert werden

muß nachjustiert werden

gut eigestelltes Laufwerk



optimale Einstellung

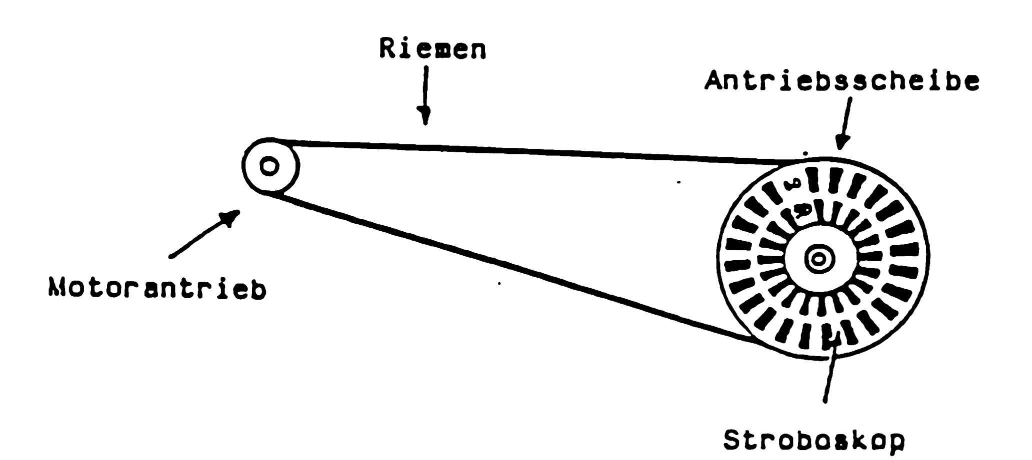
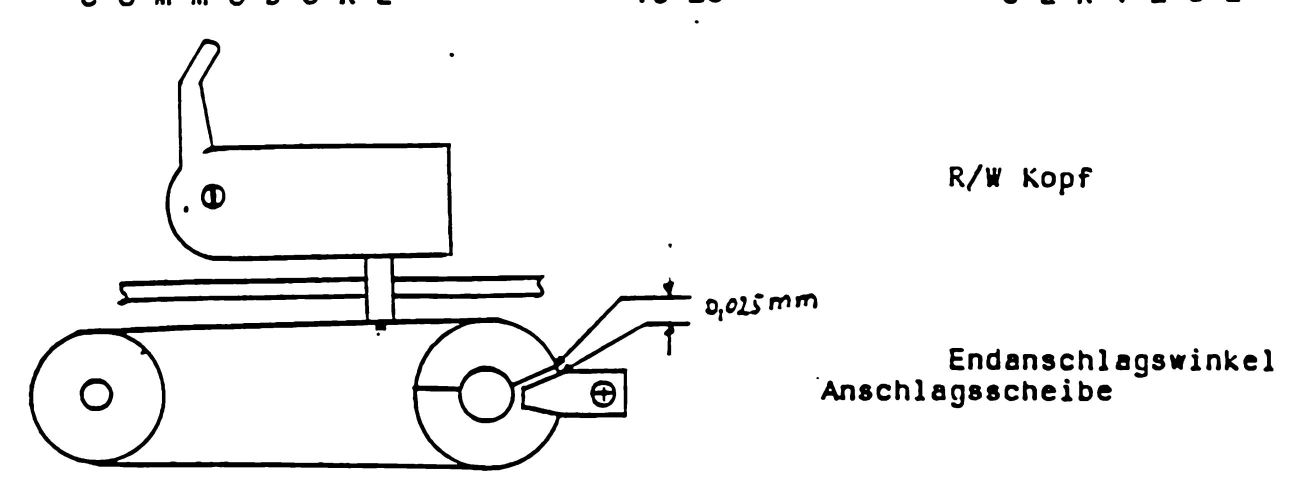


Bild 2 : Stroboskopescheibe und Antrieb

HR 8.7.82 SK

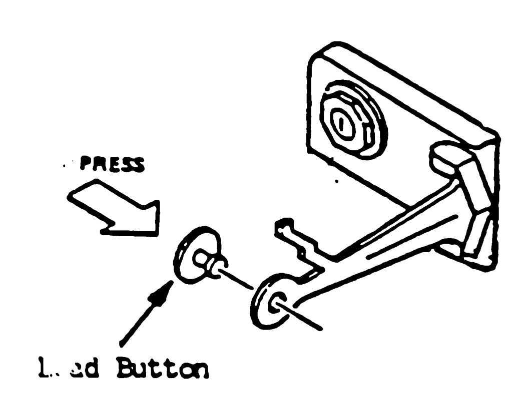


R/W Kopf

Endanschlagswinkel
Anschlagsscheibe

Bild 4: zu Punkt G

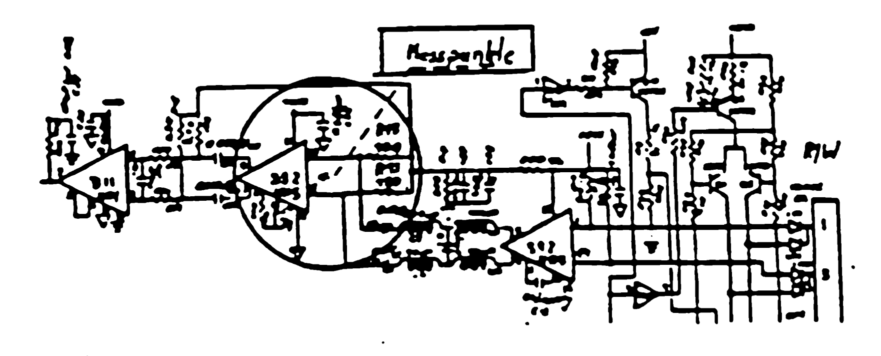
J. Austausch des Andruckfilzes

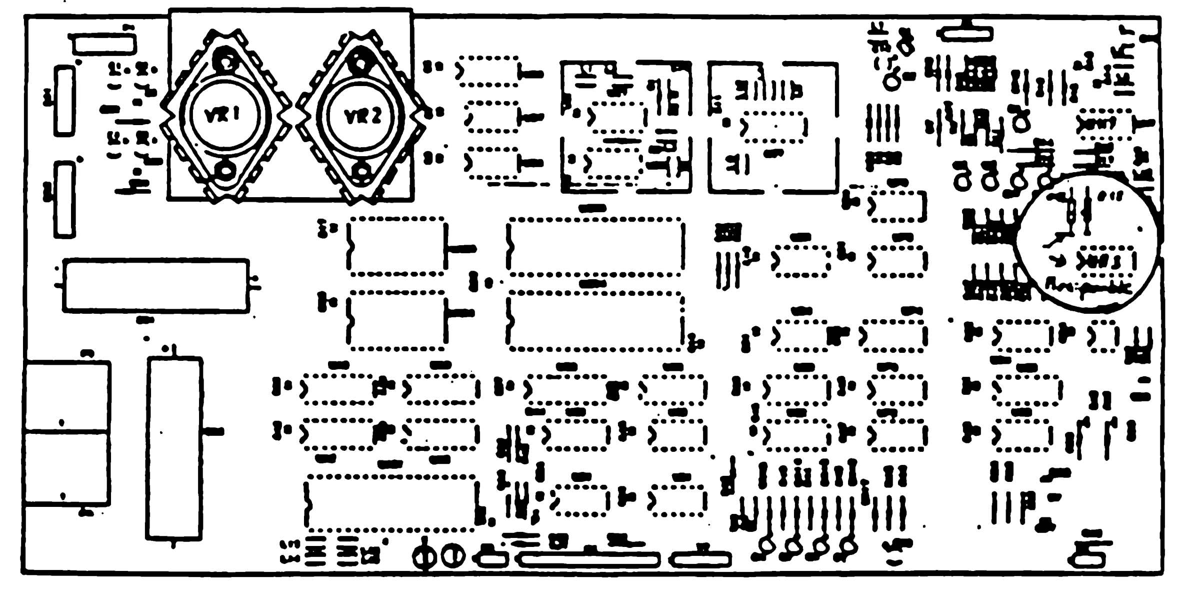


Bei Abnutzung oder Vibration (der Drive "singt") muß der Andruckfilz ausgetaucht werden. Mit der Zange wird die Halteklammer des Andruckfilzes zusammengedrückt und herausgezogen. Der neue Andruckfilz wird nur in die Halterung gedrückt.

HR 8.7.82 SK

K. Messpunkte für die Alignmenteinstellung





HR 8.7.82 SK

COMMODORE
1541 II

ENGLISCH

PREISGRUPPE 20
FACH P751

PART NO.	DESCRIPTION
340500-01	SHIPPING ASS'Y, 1541-II, USA NTSC
-02	, CND NTSC
-03	, GER PAL
340500-04	SHIPPING ASS'Y, 1541-II, UK PAL
-05	SHIPPING ASSY, 1541-II, FRENCH PAL

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
1X		ENGINEERING ADVANCE RELEASE	5-29-87	
A		PILOT PRODUCTION RELEASE	6-2-87	8-3/87
B		REVISED PER ECO 870330	10/22/87	

1. SHEET 4 OF 4 SIZE C
ASSY DWG

NOTES-UNLESS OTHERWISE SPECIFIED:

commodore	TITLE: SHIPPING ASS'Y, 1541-II	DRAWN BY:	DATE 5-29-87	ENGR:	DATE	SIZE B	DRAWING NUMBER 340500
		CHKD:		APPR:			SHEET 1 OF 4

05	04	03	02	01	ITEM	DS	PART NUMBER	DESCRIPTION	DES	BE	NOTES
S	S	S	S	S	1	B	351409-02	CABLE 6P DIN			SUB. FOR ITEM 2
1	1	1	1	1	2	B	1540027-01	CABLE 6P DIN			
					3						
					4						
					5						
					6						
					7						
					8						
0	0	0	0	1	9	0	252097-01	WARRANTY CARD, ENG			
0	0	1	0	0	10		320046-06	WARRANTY CARD, GERM			
1	0	0	0	0	11		325254-01	WARRANTY CARD, FRENCH			
0	1	0	1	1	12	C	318772-01	READ THIS FIRST			
					13						
0	0	0	0	0	14	B	354033-01	CASE MARK, 1541-II UL			
0	0	0	0	0	15	B	-02	CSA			
0	0	0	0	0	16	B	-03	VDE			
0	0	0	0	0	17	B	354033-04	CASE MARK, 1541-II BSI			
					18						
					19						
0	0	0	0	1	20	B	314075-02	SERVICE CENTER LIST			
					21						
0	1	0	1	1	22	B	354139-01	USER MANUAL, ENG			
0	0	1	0	0	23	B	354139-02	USER MANUAL, GER			
1	0	0	0	0	24		354139-03	" " , FRENCH			
					25						
					26						
					27						
					28						
					29						
					30						
					31						
1	1	1	1	1	32	B/D	354313-01	PACKING FOAM, TOP			
1	1	1	1	1	33	B/D	354313-02	PACKING FOAM, BOTTOM			
					34						
0	0	0	1	1	35	B	354452-01	GIFT BOX, 1541-II			
1	1	1	0	0	36	B	354452-02	GIFT BOX, 1541-II			
					37						
					38						

commodore

TITLE: SHIPPING ASS'Y, 1541-II

DRAWN BY: [illegible] DATE: [illegible] ENGR: [illegible] DATE: [illegible] CHKD: [illegible] APPR: [illegible]

SIZE: B DRAWING NUMBER: 340500 REV: D

05	04	03	02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
					39						
1/6	1/6	1/6	1/6	1/6	40	B	354453-01	OUTER CARTON, 1541-II			
					41						
					42						
					43						
1	1	1	1	1	44	B	354502-14	POLY BAG 400 x 260 x 0.04			FOR MAIN UNIT
1	1	1	1	1	45	B	4022044-02	POLY BAG 90 x 250 x 0.04			FOR CABLE
1	1	1	1	1	46	B	251417-02	POLY BAG 200 x 300 x 0.04			FOR USER'S MANUAL
					47						
					48						
					49						
					50						
					51						
					52						
0	1	0	0	0	53		325249-01	UK PACK, WARRANTY SUPPLEMENT			UK
					54						
					55						
					56						
					57						
1	1	1	1	1	58	B	251171-03	DUMMY DISKETTE			NEWTRONICS DRIVE USED ONLY
0	0	1	0	0	59	B	359800-08	DISKETTE DEMO C64			
0	0	1	0	0	60	B	359800-09	DISKETTE DEMO 1551/1541			
1	1	S	1	1	61	B	1540024-03	DISKETTE DEMO 1541			SUB FOR ITEM 60
					62						
					63						
0	0	0	0	1	64	B	340501-01	MAIN ASS'Y, 1541-II UL			
0	0	0	1	0	65	B	340501-02	MAIN ASS'Y, 1541-II CSA			
1	0	1	0	0	66	B	340501-03	MAIN ASS'Y, 1541-II VDE			
0	1	0	0	0	67	B	340501-04	MAIN ASS'Y, 1541-II BSI			
					68						
					69						
					70						
0	0	0	1	1	71	B	340031-01	POWER SUPPLY ASS'Y UL/CSA			
1	0	1	0	0	72	B	340031-02	POWER SUPPLY ASS'Y VDE			
0	1	0	0	0	73	B	340031-03	POWER SUPPLY ASS'Y BSI			
					74						
					75						
					76						

commodore

TITLE: SHIPPING ASS'Y, 1541-II

DRAWN BY: [illegible] DATE: [illegible]
CHKD: J. S. Wu DATE: [illegible]
ENGR: [illegible] DATE: [illegible]
APPR: [illegible] DATE: [illegible]

SIZE: B | DRAWING NUMBER: 340500 | REV: B

SHEET 3 OF 4

PART NO.	DESCRIPTION
340501-01	MAIN ASS'Y, 1541-II, UL
-02	, CSA
-03	, VDE
340501-04	MAIN ASS'Y, 1541-II, BSI

LTR	ZONE	DESCRIPTION	DATE	APPROVED
1A		ENGINEERING ADVANCE RELEASE	5-29-87	
A		PILOT PRODUCTION RELEASE	6-3-87	8-3/87

NOTES-UNLESS OTHERWISE SPECIFIED:

1. SHEET OF SIZE
ASSY DWG

commodore	TITLE: MAIN ASS'Y: 1541-II	DRAWN BY:	DATE 5-27-87	ENGR:	DATE 9-21-87	SIZE B	DRAWING NUMBER 340501
		CHKD:		APPR:	8-3/87		SHEET 1 OF 3

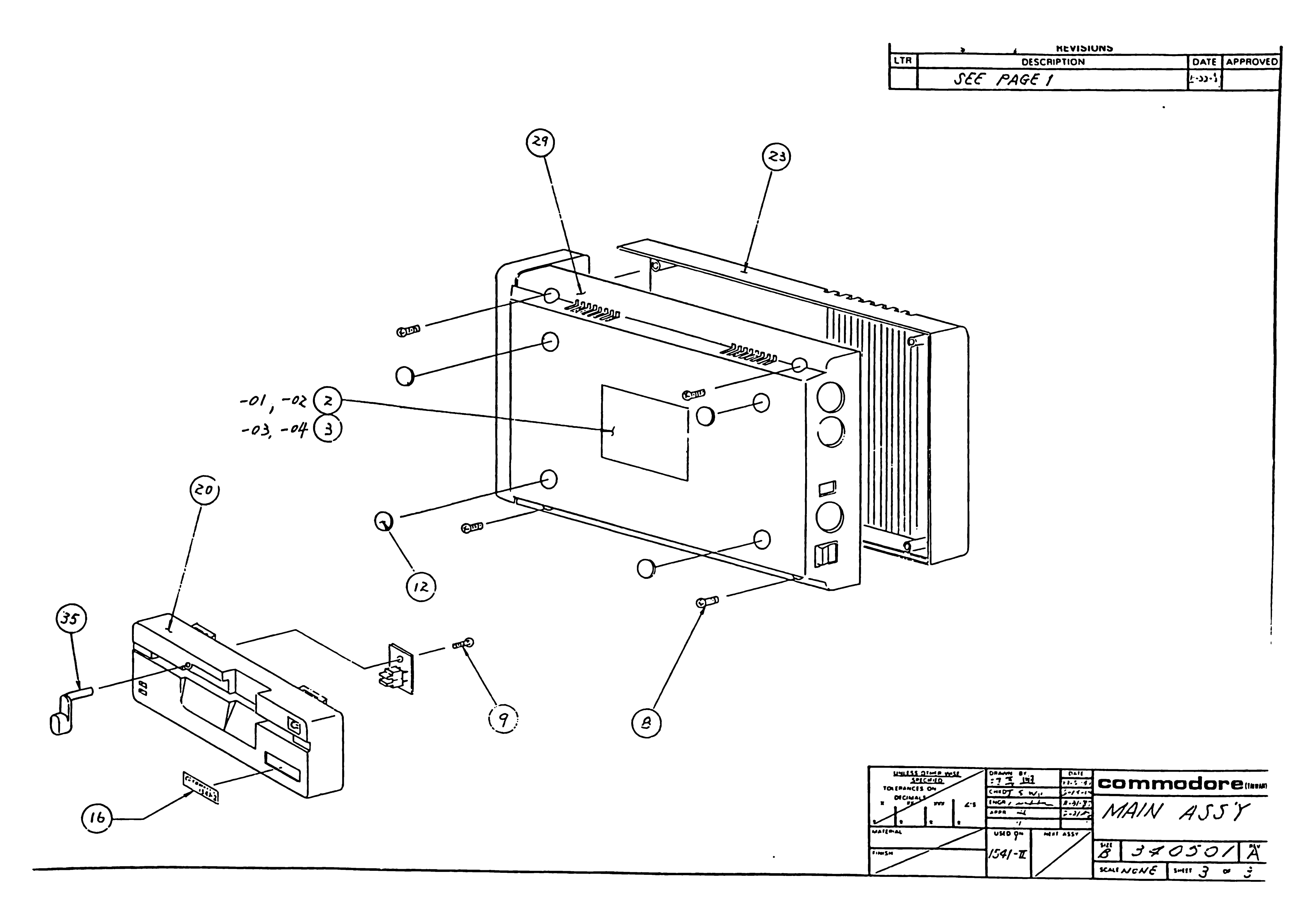
04	03	02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
				1						
0	0	1	1	2	B	354034-01	LABEL RATING, 1541-II UL/CSA			
1	1	0	0	3	B	354034-02	LABEL RATING, 1541-II VDE/BSI			
				4						
				5						
				6						
				7						
4	4	4	4	8	B	906883-04	SCREW TAPPING M3x10L			TOP/BOTTOM CASE
1	1	1	1	9	B	906883-01	SCREW TAPPING M3x8L			LED/BEZEL
				10						
				11						
4	4	4	4	12	B	950150-03	RUBBER FOOT			
				13						
				14						
				15						
1	1	1	1	16	B	352604-01	NAME PLATE, 1541-II			
				17						
				18						
				19						
1	1	1	1	20	B/C	353308-01	BEZEL, 1541-II (N)			
S	S	S	S	21	B/C	353308-02	BEZEL, 1541-II (C)			SUB. FOR ITEM 20
				22						
1	1	1	1	23	B/C	353412-01	TOP CASE, 1541-II			
				24						
				25						
				26						
				27						
				28						
1	1	1	1	29	B	340502-01	BASE ASS'Y, 1541-II			
S	S	S	S	30	B	340502-02	BASE ASS'Y, 1541-II			SUB. FOR ITEM 29
				31						
				32						
S	S	S	S	33	B	353307-01	KNOB, 1541-II (N) φ2.9			SUB.FOR ITEM 35.USED WITH 359901-02 FDD, 70000PCS ONLY
S	S	S	S	34	B	353307-02	KNOB, 1541-II (C)			SUB.FOR ITEM 35, USED WITH 359902-01 FDD
		1	1	35	B	353307-03	KNOB, 1541-II (N)			USED WITH 359901-01 FDD
S	S	S	S	36	B	353307-04	KNOB, 1541-II (N) φ3.0			SUB.FOR ITEM 35.USED WITH 359901-02 FDD, 70000PCS ONLY
				37						
				38						

commodore

TITLE: MAIN ASS'Y 1541-II

DRAWN BY: [illegible] DATE 5-19-87 | CHKD: J.S. Wu DATE 6-17-87 | ENGR: [illegible] DATE 2-21-87 | APPR: [illegible] DATE 6-4-87

SIZE B | DRAWING NUMBER 340501 | SHEET 2 OF 3 | REV A


REVISIONS
LTR
DESCRIPTION
DATE
APPROVED
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-03, -04 3
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UNLESS OTHERWISE SPECIFIED
TOLERANCES ON
DECIMALS
MATERIAL
FINISH
DRAWN BY
CHKD
ENGR
APPR
DATE
USED ON
1541-II
NEXT ASSY
commodore
MAIN ASS'Y
SIZE
B
340501
REV
A
SCALE NONE
SHEET 3 OF 3

PART NO.	DESCRIPTION
340502-01	BASE ASS'Y, 1541-II NEWTRONICS
340502-02	BASE ASS'Y, 1541-II CHINON

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
1A		ENGINEERING ADVANCE RELEASE	5-29-87	
A		PILOT PRODUCTION RELEASE	6-2-87	[illegible]

NOTES-UNLESS OTHERWISE SPECIFIED:

ASSY DWG

1. SHEET OF SIZE

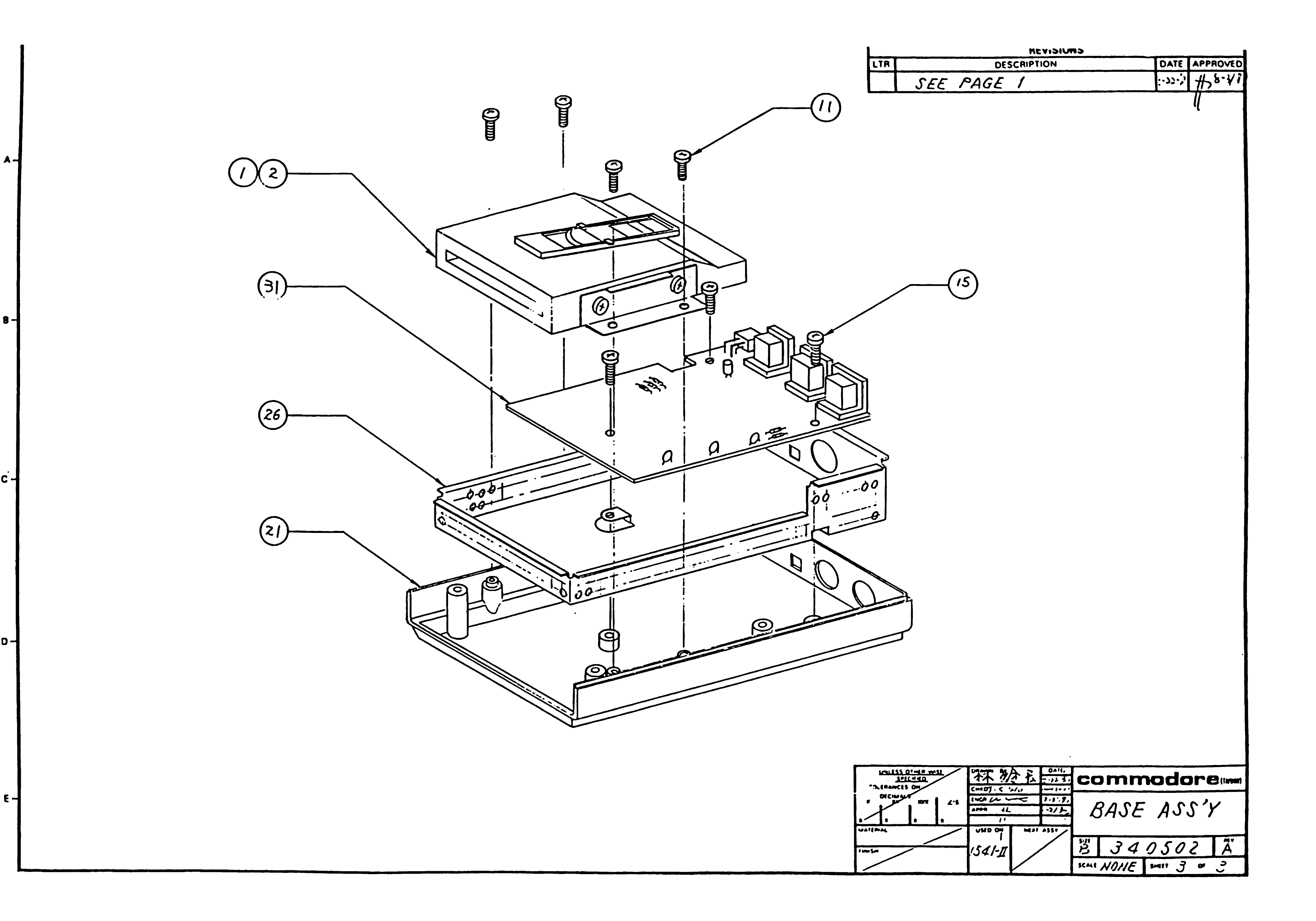
commodore	TITLE: BASE ASS'Y, 1541-II	DRAWN BY: [illegible]	DATE: [illegible]	ENGR: [illegible]	DATE: [illegible]	SIZE: B	DRAWING NUMBER: 340502
		CHKD:		APPR: [illegible]	DATE: [illegible]		SHEET 1 OF 3

PART/DASH NO. 02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BENE	NOTES
0	1	1	E	340504-01	FDD ASS'Y , 1541-II (N)			
1	0	2	B	340504-02	FDD ASS'Y , 1541-II (C)			
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		10						
4	4	11	B	906883-03	SCREW TAPPING , M3×6L			BRACKET / BOTTOM CASE
		12						
		13						
		14						
3	3	15	B	906883-01	SCREW TAPPING , M3×8L			PCB / SHIELD / BOTTOM CASE
		16						
		17						
		18						
		19						
		20						
1	1	21	D	353413-01	BOTTOM CASE , 1541-II			
		22						
		23						
		24						
		25						
1	1	26	C	351607-01	SHIELD BOTTOM , 1541-II			
		27						
		28						
		29						
		30						
1	1	31	B	340503-01	PCB ASS'Y , 1541-II			
		32						
		33						
		34						
		35						
		36						
		37						
		38						

commodore

TITLE: BASE ASS'Y , 1541-II

DRAWN BY	DATE	ENGR	DATE	SIZE	DRAWING NUMBER	REV
[illegible]	3-5-87	[illegible]	3-31-87	B	340502	A
CHKD J. S. Wu	6-17-87	APPR [illegible]	2-31-87		SHEET 2 OF 3	


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APPROVED
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E
UNLESS OTHERWISE SPECIFIED
TOLERANCES ON
DECIMALS
MATERIAL
FINISH
DRAWN
CHKD
ENGR
APPR
DATE
USED ON
NEXT ASSY
1541-II
commodore
BASE ASS'Y
SIZE B
340502
REV A
SCALE NONE
SHEET 3 OF 3

PART NO.	DESCRIPTION
340503-01	PCB ASS'Y, 1541-II

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PILOT PRODUCTION RELEASE	6-3-87	8-3/87

1. SHEET OF SIZE
   ASSY DWG

NOTES-UNLESS OTHERWISE SPECIFIED:

commodore	TITLE: PCB ASS'Y, 1541-II	DRAWN BY:	DATE 6-3-87	ENGR:	DATE 8-3/87	SIZE B	DRAWING NUMBER 340503
		CHKD:		APPR:	8-3/87		SHEET 1 OF 3

PAR./DASH NO. 01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BENC	NOTES
	1						
	2						
1	3	B	251065-04	HEADER 4 PIN	CN2		
1	4	B	325562-05	HEADER 5 PIN	CN4		
1	5	B	325562-0[illegible]	HEADER 6 PIN	CN3		
S	6	B	325562-[illegible]	HEADER 7 PIN	CN4		SUB. FOR ITEM 4. USED WITH 359901-02 FDD. 7000PCS ONLY
REF	7	C	355207-01	SCHEMATIC, 1541-II			
REF	8		355208-01	ARTWORK, 1541-II			
	9						
	10						
1	11		355124-01	PCB FABRICATION			
	12						
1	13	A	900556-02	CRYSTAL 16 MHZ	Y1		
S	14	B	900557-01	CRYSTAL 16 MHZ	Y1		SUB. FOR ITEM 13
	15						
1	16	B	901521-17	IC, 74LS42 DEC.	U2		
1	17	B	901521-32	IC, 74LS86 2-EX-OR	U11		
1	18	B	901521-02	IC, 74LS04 INV.	U9		
1	19	B	901521-03	IC, 74LS08	U1		
1	20	B	901522-06	IC, 7406	U7		
1	21	B	901435-01	IC, MPS6502 CPU	U3		
2	22	B	901437-01	IC, MPS6522 VIA	U6,8		
1	23	B	251968-03	IC, DOS ROM	U4		
1	24	B	325502-03	TMM2016P 2K S-RAM (150nS)	U5		
1	25	B	251828-01	IC, 64H156 GATE ARRAY	U10		
S	26	B	251828-02	IC, GATE ARRAY	U10		SUB. FOR ITEM 25
1	27	B	251871-01	IC, MPA2003C	U13		
1	28	B	252308-01	IC, FDD R/W AMP. (CX20185)	U12		
S	29	B	252308-02	IC, FDD R/W AMP. (MC2871P)	U12		SUB. FOR ITEM 28
	30						
1	31	B	355810-01	LED RED 1×5 mm	LED1		
1	32	B	355810-02	LED GREEN 1×5 mm	LED2		
	33						
6	34	B	901550-01	RESISTOR 5% 1/4W 1K	R4,12,21,23,31,32		
2	35	B	901550-89	RESISTOR 5% 1/4W 150	R5.41		R41 USED WITH 359901-02 FDD, 7000PCS ONLY
3	36	B	901550-69	RESISTOR 5% 1/4W 1.5K	R8,9,30		
1	37	B	901550-53	RESISTOR 5% 1/4W 2K	R3		
1	38	B	901550-52	RESISTOR 5% 1/4W 220	R1		

commodore

TITLE: PCB ASS'Y, 1541-II

DRAWN BY	DATE	ENGR	DATE	SIZE	DRAWING NUMBER	REV
[illegible]	6-3-87	[illegible]	8-31-87	B	340503	A
CHKD S.C. Huang	8-31-87	APPR [illegible]	9-3-87		SHEET 2 OF 3	

QTY REQD PER PART/DASH NO.	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
	39						
	40						
1	41	B	901550-29	RESISTOR 5% 1/4W 240	R15		
1	42	B	901550-85	RESISTOR 5% 1/4W 2.4K	R37		
	43						
1	44	B	901550-14	RESISTOR 5% 1/4W 330	R7		
	45						
1	46	B	901550-39	RESISTOR 5% 1/4W 3.9K	R14		
1	47		-21	39K	R28		
9	48		-19	4.7K	R2,6,11,13,16,17,19,20,26		
1	49		-22	47K	R10		
1	50		-30	560	R29		
2	51	B	901550-40	RESISTOR 5% 1/4W 620	R18,22		
1	52	B	901550-58	RESISTOR 5% 1/4W 470	R42		
	53						
	54						
2	55	A	251071-14	CAP. RADIL CER. 50V 10% SL 22P	C11,12		
2	56	B	900010-25	50V Z5U 1000P	C20,27		
1	57	A	251069-10	50V 10% Y5P 1500P	C21		
S	58	B	900010-61	25V Z5U 0.1u	C1,2,4~10,13~19,24~26,28		SUB. FOR ITEM 59
20	59	B	252036-02	CAP. RADIL CER. 16V Z5V 0.1u	C1,2,4~10,13~19,24~26,28		
	60						
	61						
3	62	A	900100-01	ELEC. CAP. 25V 10u	C3,22,23		
	63						
	64						
1	65	A	903025-01	FERRITE BEADS	FB5		
	66						
1	67	B	252369-37	CHOKE 330uH	L1		
	68						
1	69	B	252182-01	SWITCH ROCKER	SW1		
1	70	B	252144-02	SWITCH DIP 2POS	SW2		
	71						
1	72	A	904150-05	IC. SOCKET LOW PRO 28PIN	U4		
	73						
1	74	B	359004-01	CONNECTOR 4P DIN	CN7		
S	75	A	903361-02	CONNECTOR 6P DIN	CN5,6		SUB. FOR ITEM 76
2	76	A	903361-03	CONNECTOR 6P DIN	CN5,6		

commodore

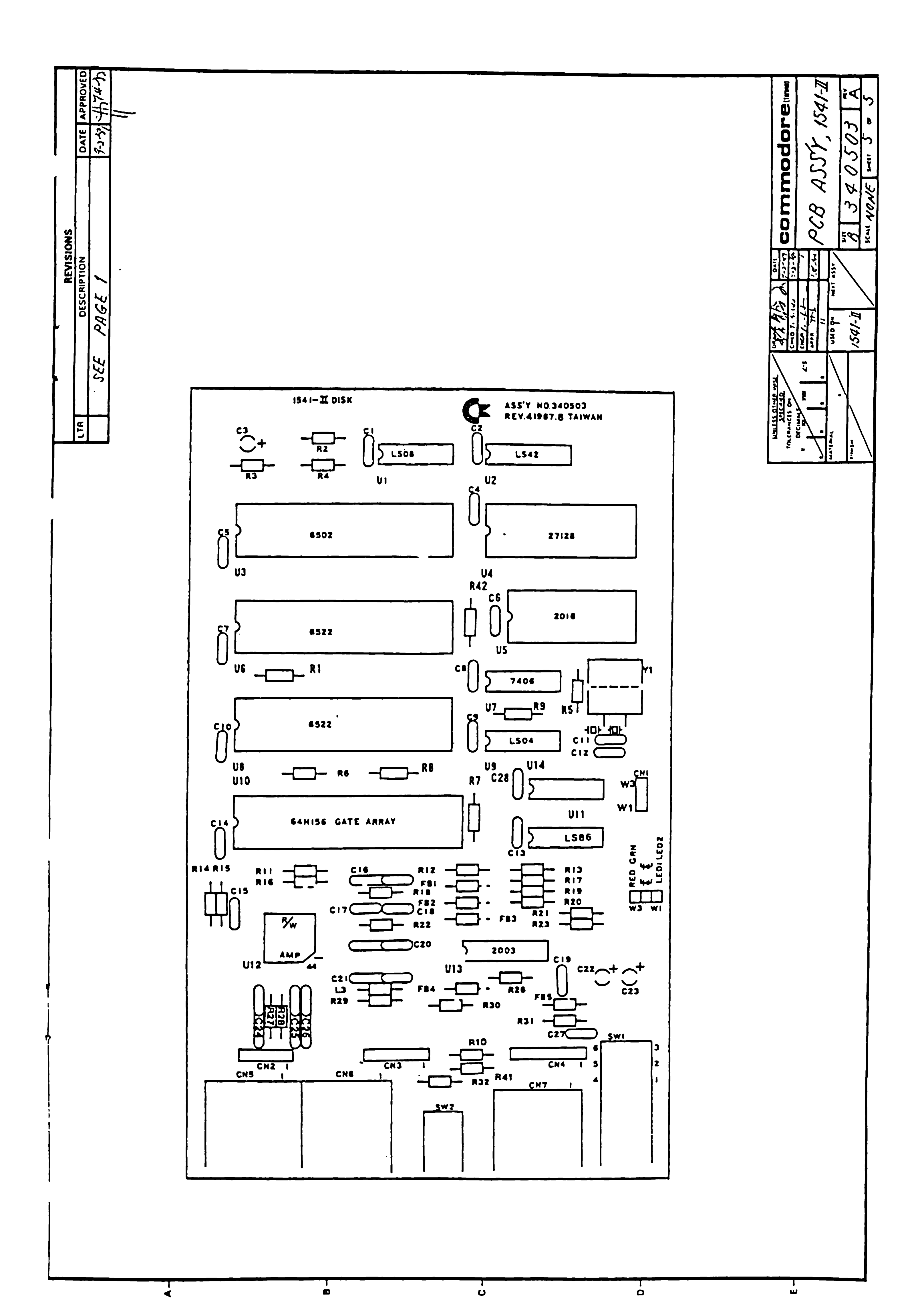
TITLE: PCB ASS'Y, 1541-II

DRAWN BY: [illegible] DATE 8-4-87 — CHKD S.C. Hwang 8-31-87 — ENGR: [illegible] DATE 8-31-87 — APPR: [illegible] 8-31-87

SIZE B — DRAWING NUMBER 340503 — SHEET 3 OF 5 — REV A

PART/DASH NO. 01	ITEM	S	PART NUMBER	DESCRIPTION	REF DES	BCNC	NOTES
	77						
	78						
	79						
1	80	B	200019-17	LEAD WIRE AWG24 220mm BLK	W3		
1	81	B	200019-16	LEAD WIRE AWG24 220mm RED	W1		
1	82	B	200019-18	LEAD WIRE AWG24 220mm WHT	W2		
1	83	B	200018-13	JUMPER 17Km/27mm	FIXED Y1		
	84						
	85						
	86						
S	87	B	324746-03	IC EP-ROM 27128	U4		SUB. FOR ITEM 23
S	88	B	355640-02	IC EP-ROM 27128	U4		SUB. FOR ITEM 23
1	89	B	901521-30	IC, 74LS14 SH.INV	U14		
	90						
	91						
	92						
	93						
	94						
	95						
	96						
	97						
	98						
	99						
	100						
	[illegible]						
	102						
	103						
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	106						
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	108						
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	111						
	112						
	113						
	114						

commodore	TITLE: PCB ASS'Y, 1541-II	DRAWN BY: [illegible]	DATE: [illegible]	ENGR: [illegible]	DATE: [illegible]	SIZE: B	DRAWING NUMBER: 340503	REV: A
		CHKD: S.C. Hwang	DATE: 8-31-83	APPR: [illegible]	DATE: [illegible]		SHEET 4 OF 5	



REVISIONS
LTR
DESCRIPTION
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APPROVED
SEE PAGE 1
commodore
PCB ASSY, 1541-II
340503
A
SIZE B
SCALE NONE
SHEET 5 OF 5
USED ON 1541-II
NEXT ASSY
MATERIAL
FINISH
1541-II DISK
ASS'Y NO 340503
REV.4 1987.8 TAIWAN
LS08
LS42
6502
27128
6522
2016
7406
6522
LS04
64H156 GATE ARRAY
LS86
2003
R/W
AMP
U1
U2
U3
U4
U5
U6
U7
U8
U9
U10
U11
U12
U13
U14
Y1
CN1
CN2
CN3
CN4
CN5
CN6
CN7
SW1
SW2
W1
W3
RED GRN
LED1 LED2
A
B
C
D
E

PART NO.	DESCRIPTION
340504-01	DISK DRIVE ASS'Y, 1541-II (N)
340504-02	DISK DRIVE ASS'Y, 1541-II (C)

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
1X		ENGINEERING ADVANCE RELEASE	5-29-87	
A		PILOT PRODUCTION RELEASE	6-2-87	[illegible] 8-3-87

1. SHEET OF SIZE
   ASSY DWG

NOTES-UNLESS OTHERWISE SPECIFIED:

commodore	TITLE: DISK DRIVE ASS'Y, 1541-II	DRAWN BY: [illegible]	DATE 5-29-87	ENGR: [illegible]	DATE [illegible]	SIZE B	DRAWING NUMBER 340504
		CHKD:		APPR: [illegible]	DATE [illegible]		SHEET 1 OF 3

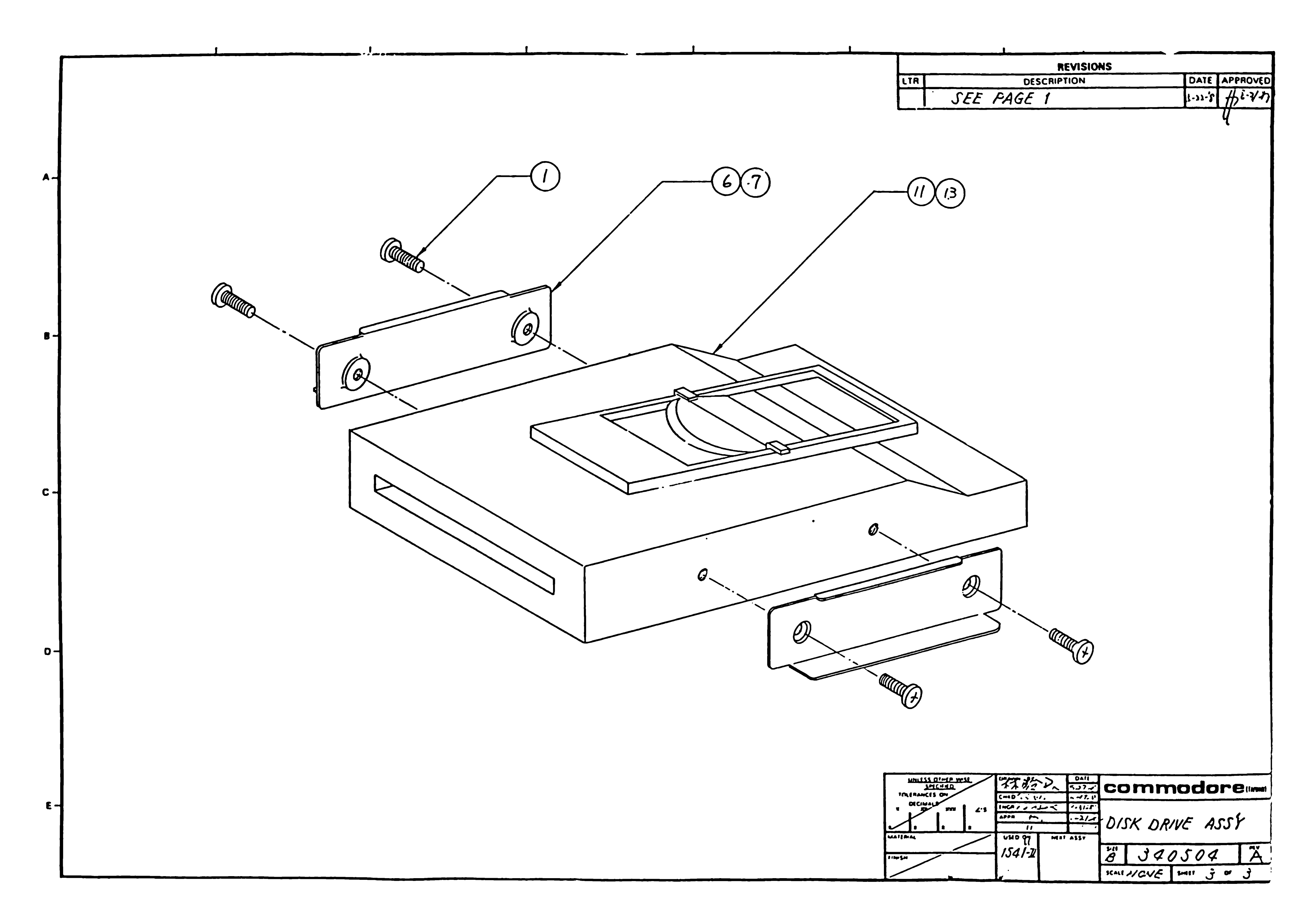
QTY/DASH NO. 02	01	ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEN	NOTES
4	4	1	B	906800-03	SCREW MACHINE M3 x 8L			BRACKET/MECHANISM
0	S	2	B	906610-03	SCREW MACHINE #6-32			SUB. FOR ITEM 1, USED ON 359901-02 ONLY
0	2	6	B	351523-01	FDD BRACKET, 1541-II			USED ON NEWTRONICS
2	0	7	B	351523-02	FDD BRACKET, 1541-II			USED ON CHINON
0	1	11		359901-01	FLOPPY DISK MECHANISM			NEWTRONICS D500
0	S	12		359901-02	FLOPPY DISK MECHANISM			REWORK TYPE, 70000 PCS ONLY
1	0	13		359902-01	FLOPPY DISK MECHANISM			CHINON FZ-501

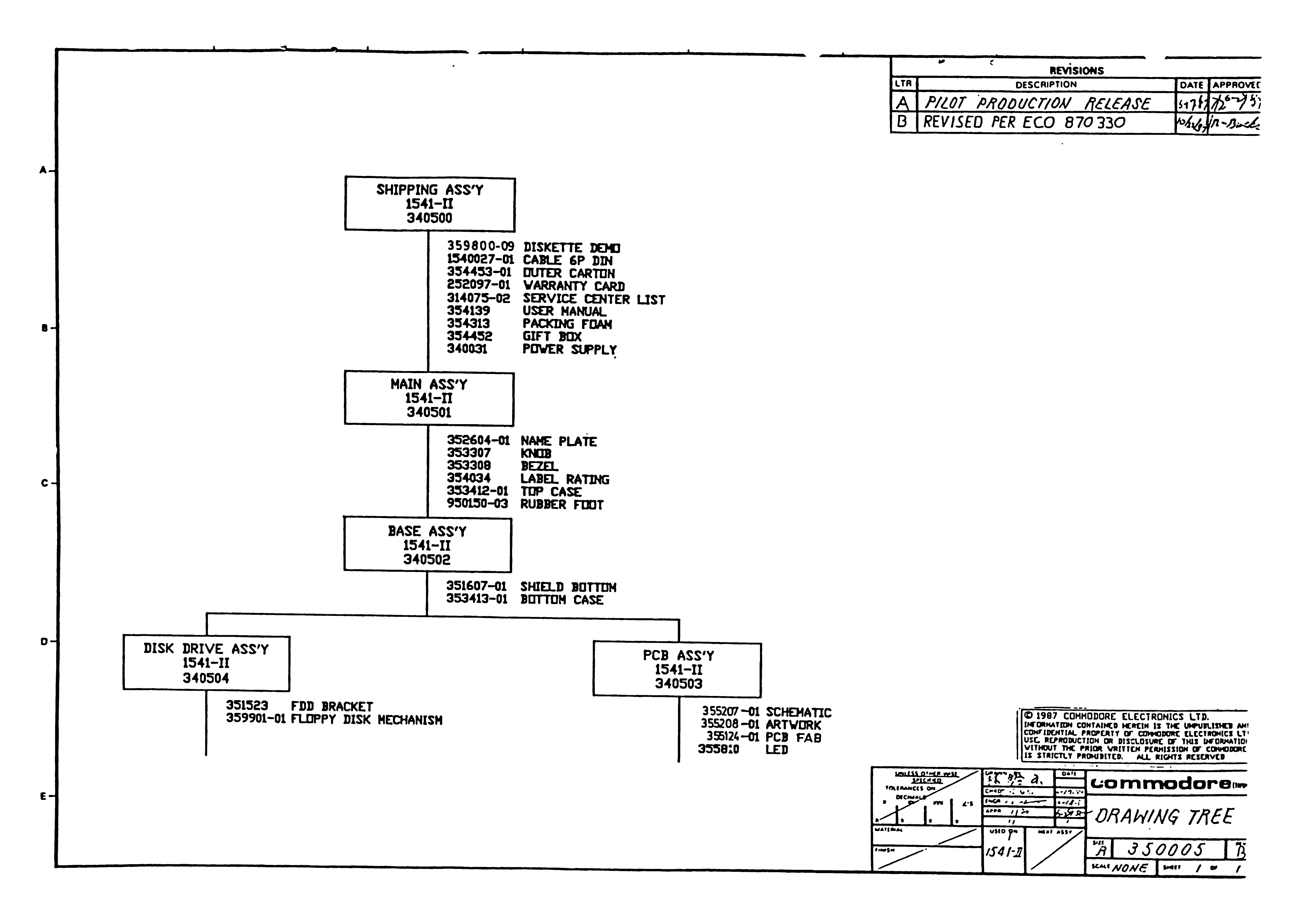
commodore

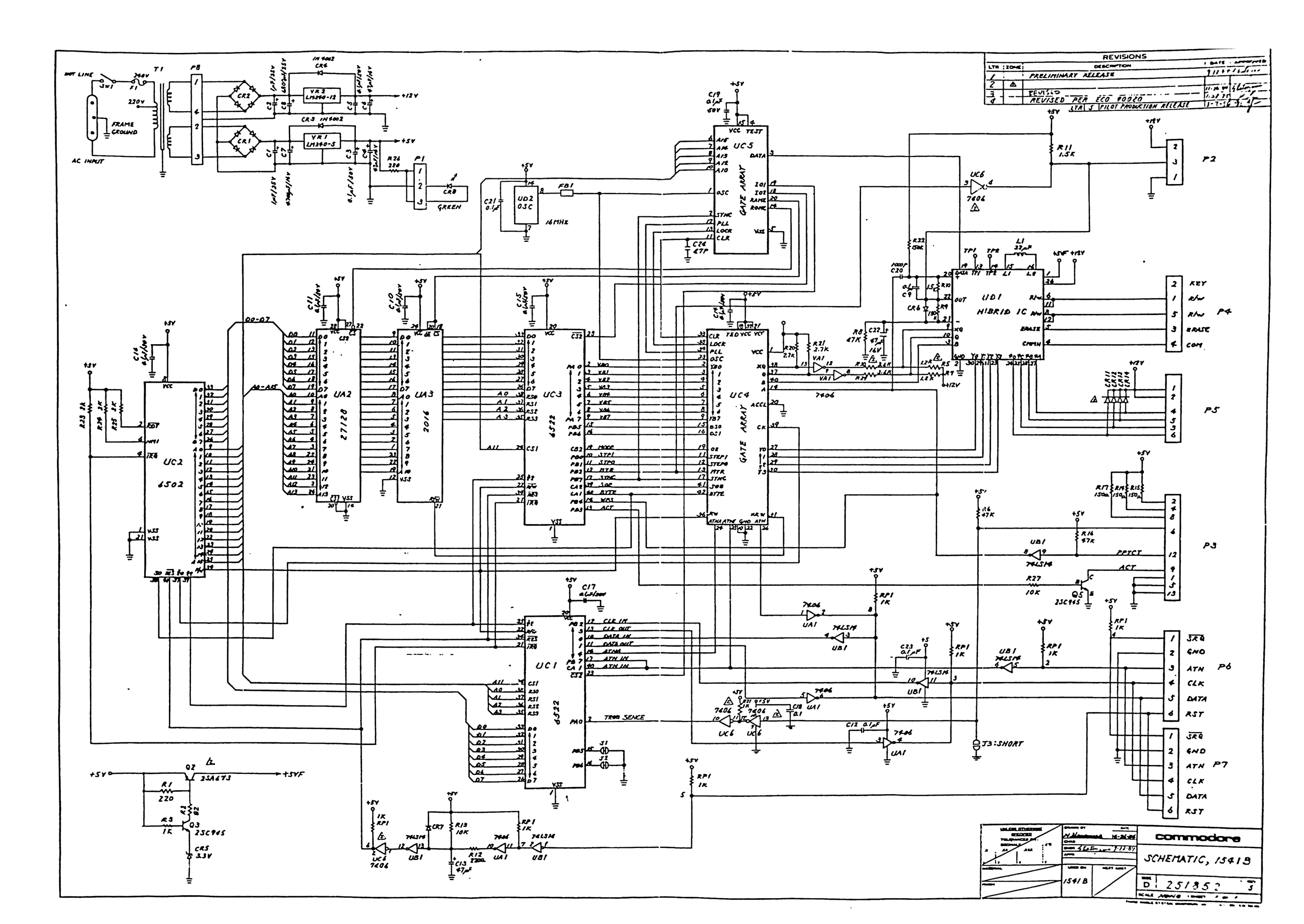
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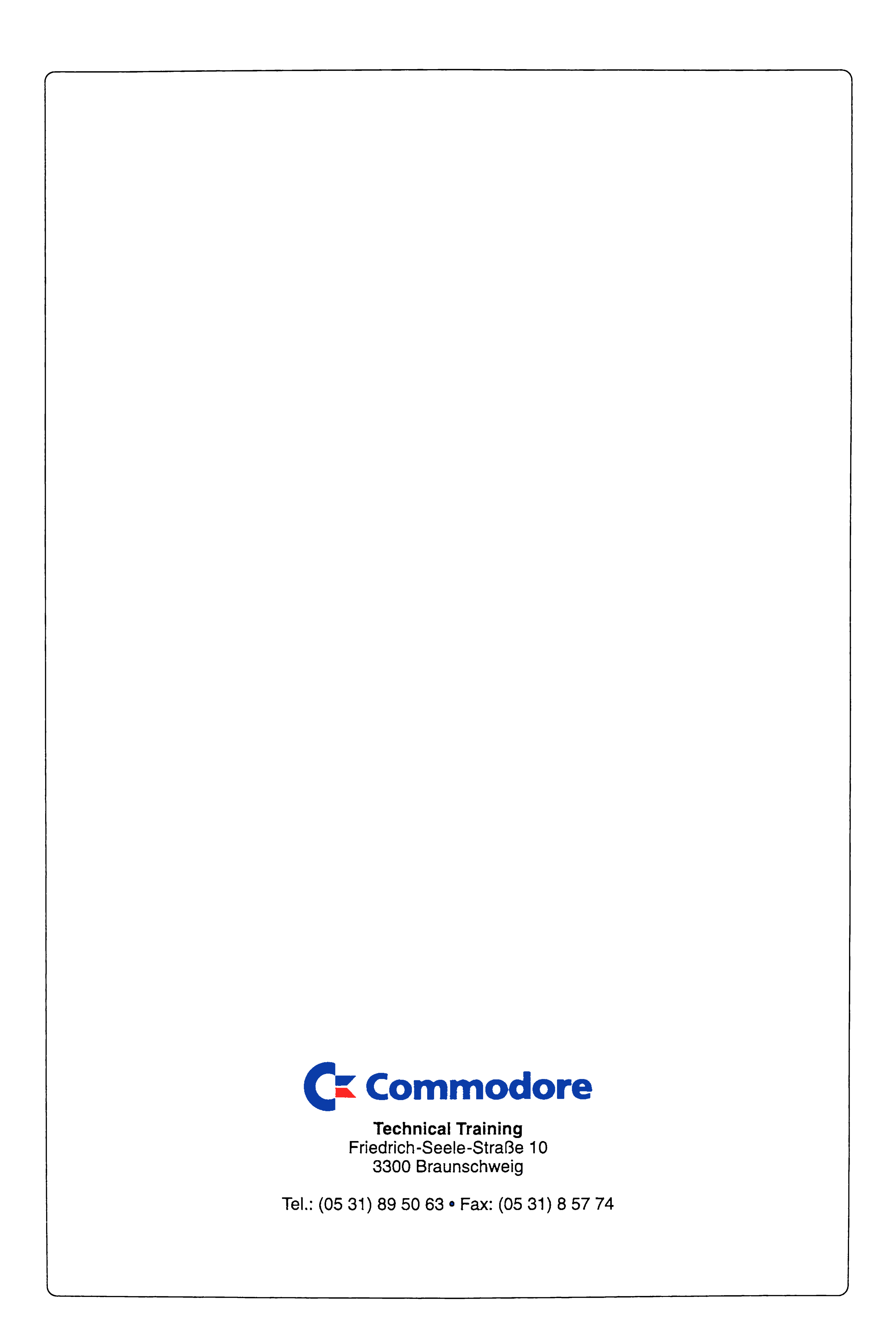
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ENGR: [illegible] DATE: 2-31-87 | APPR: [illegible] DATE: [illegible]

SIZE: B | DRAWING NUMBER: 340504 | SHEET 2 OF 3 | REV: A


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DESCRIPTION
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SEE PAGE 1
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UNLESS OTHERWISE SPECIFIED
TOLERANCES ON
DECIMALS
MATERIAL
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USED ON
1541-II
NEXT ASSY
commodore
DISK DRIVE ASSY
SIZE
B
340504
REV
A
SCALE NONE
SHEET 3 OF 3


REVISIONS
LTR DESCRIPTION DATE APPROVED
A PILOT PRODUCTION RELEASE
B REVISED PER ECO 870330
SHIPPING ASS'Y
1541-II
340500
359800-09 DISKETTE DEMO
1540027-01 CABLE 6P DIN
354453-01 OUTER CARTON
252097-01 WARRANTY CARD
314075-02 SERVICE CENTER LIST
354139 USER MANUAL
354313 PACKING FOAM
354452 GIFT BOX
340031 POWER SUPPLY
MAIN ASS'Y
1541-II
340501
352604-01 NAME PLATE
353307 KNOB
353308 BEZEL
354034 LABEL RATING
353412-01 TOP CASE
950150-03 RUBBER FOOT
BASE ASS'Y
1541-II
340502
351607-01 SHIELD BOTTOM
353413-01 BOTTOM CASE
DISK DRIVE ASS'Y
1541-II
340504
351523 FDD BRACKET
359901-01 FLOPPY DISK MECHANISM
PCB ASS'Y
1541-II
340503
355207-01 SCHEMATIC
355208-01 ARTWORK
355124-01 PCB FAB
355810 LED
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commodore
DRAWING TREE
USED ON 1541-II
SIZE A 350005 B
SCALE NONE SHEET 1 OF 1


REVISIONS
PRELIMINARY RELEASE
REVISED PER ECO 90020
PILOT PRODUCTION RELEASE
commodore
SCHEMATIC, 1541B
1541B
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Technical Training
Friedrich-Seele-Straße 10
3300 Braunschweig

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